

Executive Summary
FWP Neotropical Bird Survey
1998 Field Season
Shrub-Grassland Habitats



OEA Research, Inc. Ecological Services





Executive Summary FWP Neotropical Bird Survey 1998 Field Season Shrub-Grassland Habitats

Prepared for:

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Executive Summary

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I. INTRODUCTION

The scope of work for the second year (1998) of the two year study was basically the same as for field work in 1997. Our guidelines for this work read:

"establish multiple concurrent point-count transects in northern plains grassland habitats of eastern Montana to obtain data on species composition, habitat association, and distribution of neotropical and resident birds...Data collected by the contractor will be used to assess the status of neotropical and resident bird species and identify habitat variables that affect populations.

Grassland habitats to be sampled are in northeastern and north central Montana. Shrub-grass habitats to be sampled are in eastern and central Montana."

The study was designed to run for two years, with grassland habitats inventoried in 1997 and shrub-grassland habitats in 1998. Tasks would include surveying all transects in a uniform and systematic manner, following protocol outlined in Hutto's USFS Songbird Monitoring Program Training Manual (1994/1996) and using standard point-count methodology (Hutto et al. 1986).

Transect locations were selected during spring, 1998 and were intended to be straight-line transects with ten point-count locations at 300-meter intervals. The Hutto methodology used in 1997 suggested recording all birds detected (visually or by song) within a 25-meter radius during a ten-minute period, but field work in 1997 indicated that 100-meter transects would be much more appropriate.

Forms for the bird surveys were redsigned by OEA Research following the field season in 1997, and included several fields of information not on the 1997 forms. These forms also eliminated some vegetation information from the 1997 forms that proved to be less than valuable (Figures 1 and 2).

Each plot was to be surveyed four times: during the periods of May 15-31, June 1-15, June 16-30, and July1-15.

II. FIELD WORK

A. Methods and Field Forms

Point-count transect locations were selected during early spring of 1998 by OEA Research personnel. The basic premise for site selection was to ensure that transects occurred in a relatively uniform shrub-grassland community. Ten transects were selected in each of three general areas of southern Montana; southwest, south-central, and southeast. These transects were to run through relatively uniform habitat (locations for straight lines on compass azimuths in uniform habitat are



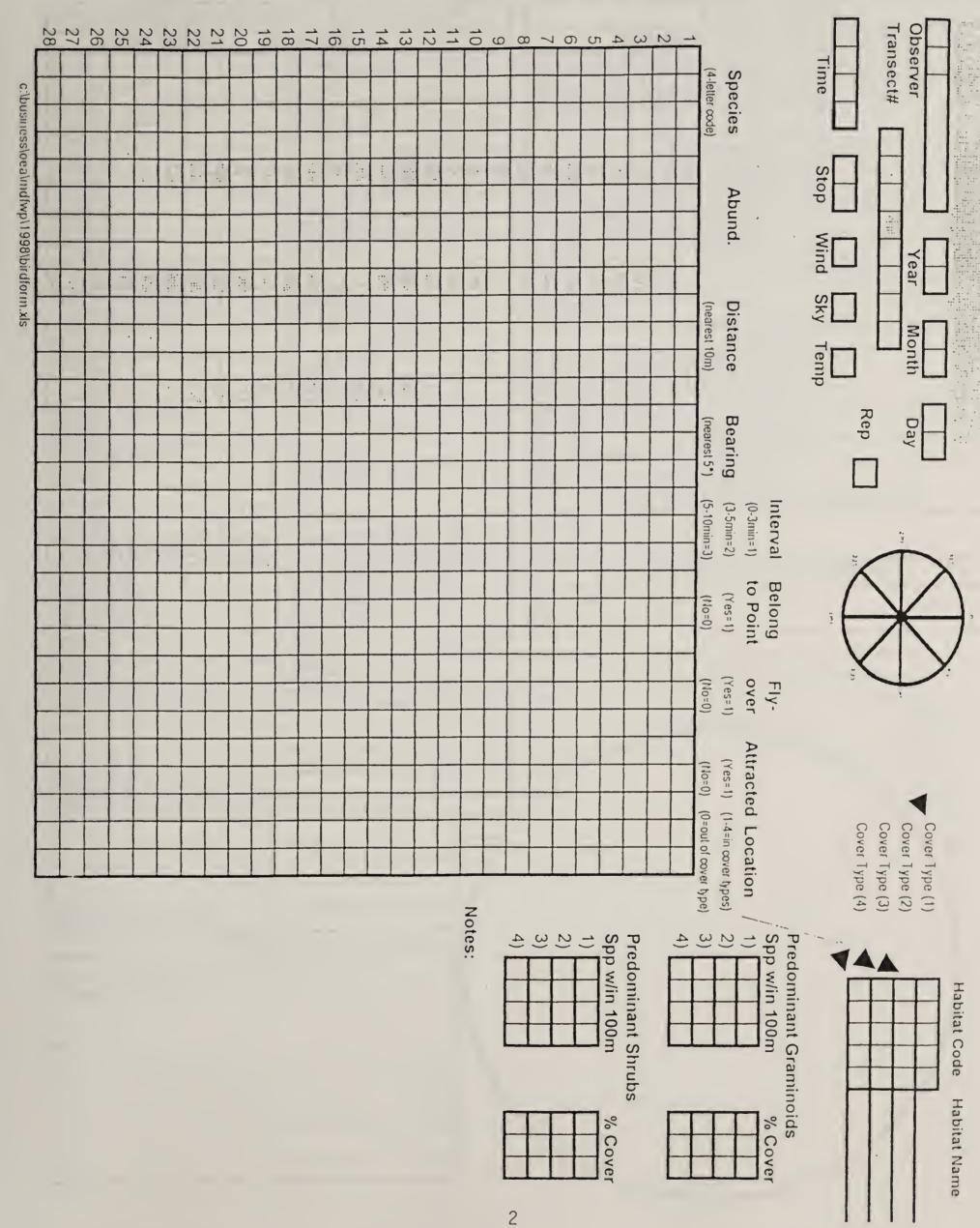




Figure 2. Point Count Characterization Form
PRAIRIE PASSERINE POINT COUNT CHARACTERIZATION TX_____ PT___

PHYSIOGRAPHY (✓)	LAND-USE (✓)	VEGETATION	
TOPOGRAPHY	FENCE	RESIDUAL VEGETATION (LITTER)	
FLAT	POWERLINE	ESTIMATED × DEPTH GROUND LITTER (cm)	
SLOPING*	ROAD	ESTIMATED × HEIGHT STANDING LITTER (cm)	
GENTLY ROLLING	STOCK TANK	ESTIMATED COVER STANDING LITTER	
RIDGELINE	OTHER**	0-5%=1.6-25=2:26-50=3.51-75=4.76-95=5.96-100=6	
COULEE	GRAZING/BROWSING	GRAMINOIDS & FORBS	
BASIN	CATTLE	% CIRCLE GRAMINOID DOMINATED	
BENCH	CURRENT	ESTIMATED MEAN HEIGHT OF GRAMINOIDS (cm)	
BREAKS	PREVIOUS FALL	ALIEN GRASSES PRESENT (✓)	
OTHER**	OTHER**	% CIRCLE FORB DOMINATED	
EDAPHIC FEATURES	SHEEP	ESTIMATED MEAN HEIGHT OF FORBS (cm)	
WET MARSH/POND	CURRENT	ALIEN FORBS PRESENT (✓)**	
DRY MARSH/POND	PREVIOUS FALL	OTHER**	
PLAYA	W7LDLIFE**	SHRUBS	
STREAM	CURRENT	% CIRCLE SHRUB DOMINATED	
CUTBANK	PREVIOUS FALL	MEAN HEIGHT OF SHRUBS (cm)	
ROCKY OUTCROP	WINTER	CACTUS PRESENT (✓)	
CLIFF	OTHER**	DECIDUOUS TREES PRESENT (✓)	
ERODED BUTTE	CURRENT	CONIFEROUS SHRUBS PRESENT (✓)	
GUMBO	PREVIOUS FALL	OTHER** (i.e., tree-form conifers)	
SCREE		CLUB MOSS COVER (* ACROSS SITE)	
OTHER**		0-5%=1.6-25%=2.26-50%=3.	
SOIL DISTURBANCE (L,M,H)	AGRICULTURE	51-75°6=4, 76-95%=5, 96-100=6	
		BARE GROUND (\$\overline{x}\) ACROSS SITE)	
WILDLIFE	SUMMER FALLOW	()-5%=1, ()-25%=2; 26-50%=3.	
LIVESTOCK	ROW CROP HAY CROP	51-75%=4, 76-95%=5, 96-100=6	
VEHICLES		31-727-0-4, 76-72-0-3, 77-100-0	
FIRE	CRP OTHER**		
OTHER**			
GRAMINOID SPP IN ORDER OF DO	OMINANCE & > %COVER	SKETCH	
		THE 100m	
		RADIUS	
TOTAL GRAMINOID COVER		POINT	
SHRUB SPP IN ORDER OF DOMIN	ANCE & 2 %COVER	COUNT	
SHREBST IN ORDER OF BOMIL	ANCERANCOVER	CIRCLE	
TOTAL SHRUB COVER			
NOTES			
•(<30 =1, 30-45° =2, 45-60° =3, >60°	=4)		
•• Desembe, ••• Species	·	1	



very difficult to find) for 3000 meters with 10 survey points at 300-meter intervals. Ten minutes were allotted for each survey point and all birds seen or heard in a 100-meter radius from the point were recorded on the form.

The 1998 Bird Data field form differed from the form used in 1997 in that there was a place to record whether or not a bird "belonged" to a point and whether it was attracted to the point. A discussion of the reasoning behind these additions is included in the 1997 report.

Vegetation data recorded on the front of the form were habitat code and name, predominant grass species, shrub species and percent cover.

The Point Count Characterization form was for recording general transect point information such as topography, edaphic features, soil disturbance, grasses and shrubs in order of dominance and percent cover, land use, residual vegetation and other information on grasses, shrubs, trees, moss and bare ground. This form also included a place to sketch a general picture of the 100-meter radius circle of each point.

B. Problems and Solutions

The field forms developed for the shrub-grassland portion of this study worked well and caused no problems like the ones encountered with the 1997 forms used at grassland points.

C. Transect Locatons

Consultation with FWP during late 1997 and early 1998 provided information on general areas to be surveyed in 1998. Survey areas in southwest Montana were located in Beaverhead County. South-central survey areas were located in Gallatin, Golden Valley, Musselshell, Petroleum and Stillwater counties. In southeast Montana, survey sites were located in Rosebud, Custer, and Powder River counties. Figure 3 lists 1998 transect locations.

III. RESULTS

During the spring and summer (15 May-15 July) of 1998, we performed 1180 ten-minute point counts at 300 points. These points were located on 30 three-km transects stratified by geographic area within Montana; 10 transects in southeast Montana, 10 transects in south-central Montana, and 10 transects in southwest Montana. We visited each transect four times over the season with the exceptions of two transects north of Melstone which were "weathered-out" on one visit.

Within 100 m of point centers we observed a total of 75 species during 1180 point counts. Sixty-three individuals and ten species were observed at distances greater than 100 m from the observer, or based on behavioral cues were deemed to be dissociated with the habitat and site.



Hence, we dropped these birds from analyses. The majority of species were observed in both low numbers and at low proportions of the total number of point counts and transects. For example, 87% of species were observed on less than 10% of the point count sites (Table 1 & Figure 4 - *Species Frequency of Occurrence*). Unsurprisingly, the most frequently encountered birds were Vesper Sparrows, Brewer's Sparrows, Western Meadowlarks, Horned Larks, Lark Buntings, Brown-headed Cowbirds, and Sage Thrashers.

The most abundant species followed a similar pattern to the frequency of occurrence with Brewer's Sparrows, Western Meadowlarks, Vesper Sparrows, Lark Buntings, and Horned Larks showing mean relative abundance greater than 1 bird per point (Table 2 & Figure 5 - *Species Means and SDs*).

Without surprise, this suite of most abundant species also showed the lowest variability in occurrence as measured by coefficients of variation. Horned Larks, Brown-headed Cowbirds, Western Meadowlarks, Brewer's Blackbirds, Vesper Sparrows, Savannah Sparrows, Grasshopper Sparrows, Lark Sparrows, Brewer's Sparrows, Lark Buntings, and Sage Thrashers all showed coefficients of variation of less than 5.0. These species, therefore, could be looked upon as the least variable and most equably encountered species within and among point count locations. Coefficients of variation for other species ranged from greater than 5 to over 23. Note that the majority (93%) of species were observed in low numbers (< 0.5 birds/point).

From one to sixteen species were observed at each of the 300 point count locations with a mode of four species (Figure 6 - *Number of Species Observed at Point Counts*). Interestingly, the ten transects located in southcentral Montana exhibited significantly greater species richness than transects in the southwest and southeast portions of Montana (Figure 7 - *Species Richness Observed by Transect*). Habitat, weather, phenology, diurnal timing, as well as observer may all contribute to this noted trend.

As in 1997, there lies a strong geographical component in the passerine occurrence and abundance data we collected (Table 3). Further analysis, whether habitat, trend, or pure numerical should incorporate location within statistical models. To exemplify this perspective, let's look at several illustrative species. The majority of Long-billed Curlews (71%), Horned Larks (60%), McCown's Longspurs (87%), Rock Wrens (78%), and Sage Thrashers (83%) were observed in southwest Montana. One of the most common species overall, Western Meadowlarks, were rarely observed in southwest Montana.

On the other hand, central Montana points contained the majority of the Eastern Kingbirds (58%), Brown-headed Cowbirds (98%), Brewer's Blackbirds (52%), Savannah Sparrows (81%), and Brewer's Sparrows (56%). Western Meadowlarks were observed most in southeast Montana (53%) as were Lark Buntings (53%) and Grasshopper Sparrows (99%). Southeast Montana sites



contributed the only Field Sparrows, whereas, southwest Montana yielded the only, but very notable, Sage Sparrows. Sage Sparrows were observed on three transects (9822, 9829, and 9830) and breeding behavior was noted. Vesper Sparrows were relatively equitably distributed across the southern tier of the state.

The 300 point count locations were situated within 30 cover classes totaling 324 cover class occurrences (Table 4 - Hutto *et al.* 1998). The majority (76.5%) of the occurrences were in grazed vegetative communities. Big sagebrush communities contributed 227 (70%) of the occurrences, whereas, greasewood communities contributed 51 (15.7%) of the total occurrences. The remainder of the vegetative communities were split between silver sagebrush, grass-dominated communities, low sagebrush, and wooded areas.

Table 5 is a summary of frequency of occurrence for bird species by transect and Table 6 is a summary of species abundance by point.

IV. DISCUSSION

As the scope of work for this project stated, our job was to "assess the status of neotropical and resident bird species and identify habitat variables that affect populations." Toward this end, we have surveyed birds at 450 individual points during two field seasons. We found some interesting information, saw some birds we expected to see and some we were excited to see.

While conducting these surveys and reviewing our data, we realized that we were seeing only the tip of the iceberg with our 450 points. Grassland and shrub-grassland habitats cover most of Montana and are the least well known by bird researchers. Land use management decisions are being made daily that can affect birds on enormous chunks of state, federal and privately owned land. Surveying this sea of habitat is an equally enormous task, but it is one that we have begun and one that should continue while there is momentum. Perhaps the greatest goal achieved by these two years and 450 points of inventory was to put the wheels in motion to continue surveys in Montana's grassland and shrub-grassland habitats.



LITERATURE CITED

Hutto, R.L., J.S. Young, and J. Hoffland. 1998. USDA Forest Service Northern Region Landbird Monitoring Project; Field Methods. 61 pp.

OEA Research, Inc. 1998. FWP/PIF Neotropical Bird Presentation - 1997 Field Season. 34 pp.



Figure 3. 1998 Transect Locations

Transect #9801	Melstone NE Quadrangle; Musselshell County
Transect #9802	Township 11N, Range31E, Section 33; T10N, R31E, S4 Melstone NW Quadrangle; Musselshell County
Transect #7002	T10N, R30E, S1
Transect #9803	Flatwillow Quadrangle; Petroleum County
	T13N, R25E, S36
Transect #9804	Snoose Creek Quadrangle; Petroleum County
	T13N, R25E, S15
Transect #9805	Wallrock Quadrangle: Gallatin County
•	T3N, R7E, S16
Transect #9806	Cushman Quadrangle; Golden Valley County
T	T7N, R22E, Secs. 8 & 17
Transect #9807	Lavina Quadrangle; Golden Valley County
Transect #9808	T7N, R22E, Secs. 5 & 8 Wheat Busin Quadrangle: Stillwater County
Transect #9000	Wheat Basin Quadrangle; Stillwater County T2N, R21E, Secs. 4 & 3
Transect #9809	Battle Butte Quadrangle; Stillwater County
210110000	T3N, R20E, S36
Transect #9810	Sedan Quadrangle; Gallatin County
	T13N, R7E, S36
Transect #9811	Yablonski Ranch & McGinnis Butte Sw Quadrangles; Rosebud County
	T12N, R34E, Secs. 36 & 35; T11N, R34E, S1
Transect #9812	McGinnis Butte SW; Rosebud County
T	T12N, R34E, Secs. 26, 27 & 22
Transect #9813	Paddy Fay Creek Quadrangle; Custer County
Transect #9814	T7N, R47E, Secs. 15, 22 & 23 Paddy Fay Grapk Overdrandler Guster County
11alisect #9014	Paddy Fay Creek Quadrangle; Custer County T7N, R47E, Secs. 26 & 35
Transect #9815	Rattlesnake Ridge Quadrangle; Powder River County
riansoce nyors	T2S, R54E, Secs. 6, 7, 18 & 17
Transect #9816	Rattlesnake Ridge Quadrangle; Powder River County
	T2S, R54E, Secs. 6, 7, 8 & 17
Transect #9817	Sayle Quadrangle; Powder River County
_	T7S, R47E, Secs. 14, 15 & 16
Transect #9818	Sayle, Phillips Butte & Goodspeed Butte Quadrangles; Powder River Co.
T	T7S, R47E, Secs. 9 & 8
Transect #9819	Clubfoot Creek Quadrangle; Rosebud County
Transect #9820	T5S, R42E, Secs. 26, 27 &28 Browns Mountain Quadrangle; Rosebud County
Transect π/620	T5S, R42E, Secs. 36 & 25; T5S R43E, S30
Transect #9821	Twin Adams Mountain; Beaverhead County
	T5S, R10W, Secs. 13 & 12
Transect #9822	Twin Adams Mountain; Beaverhead County
	T5S, R10W, S13; T5S, R9W, Secs. 18 & 7
Transect #9823	Rock Island Ranch; Beaverhead County
	T12S, R8W Secs. 11 & 12; T12 S, R7W, S6



Figure 3., cont.

Transect #9824	Rock Island Ranch Quadrangle; Beaverhead County
	T11S, R8W, Sec. 23, 24 & 25
Transect #9825	Caboose Canyon & Island Butte Quadrangles; Beaverhead County
	T15S, R10W, S6; T15S, R11W, S1
Transect #9826	Caboose Canyon & Island Butte Quadrangles; Beaverhead County
	T15S, R10W, S7; T15S, R11W, Secs. 12 & 11
Transect #9827	Monida Quadrangle; Beaverhead County
	T14S, R5W, Secs. 18 & 19
Transect #9828	Monida Quadrangle; Beaverhead County
•	T14S, R5W, S30, T14S, R6W, Secs. 25 & 24
Transect #9829	Grant Quadrangle; Beaverhead County
	T9S, R12W, Secs. 3, 2 & 11
Transect #9830	Grant Quadrangle; Beaverhead County
	T9S, R12W, Secs. 3 & 4; T8S, R12W, Secs. 33 & 32



Figure 4. Species Frequency of Occurrence

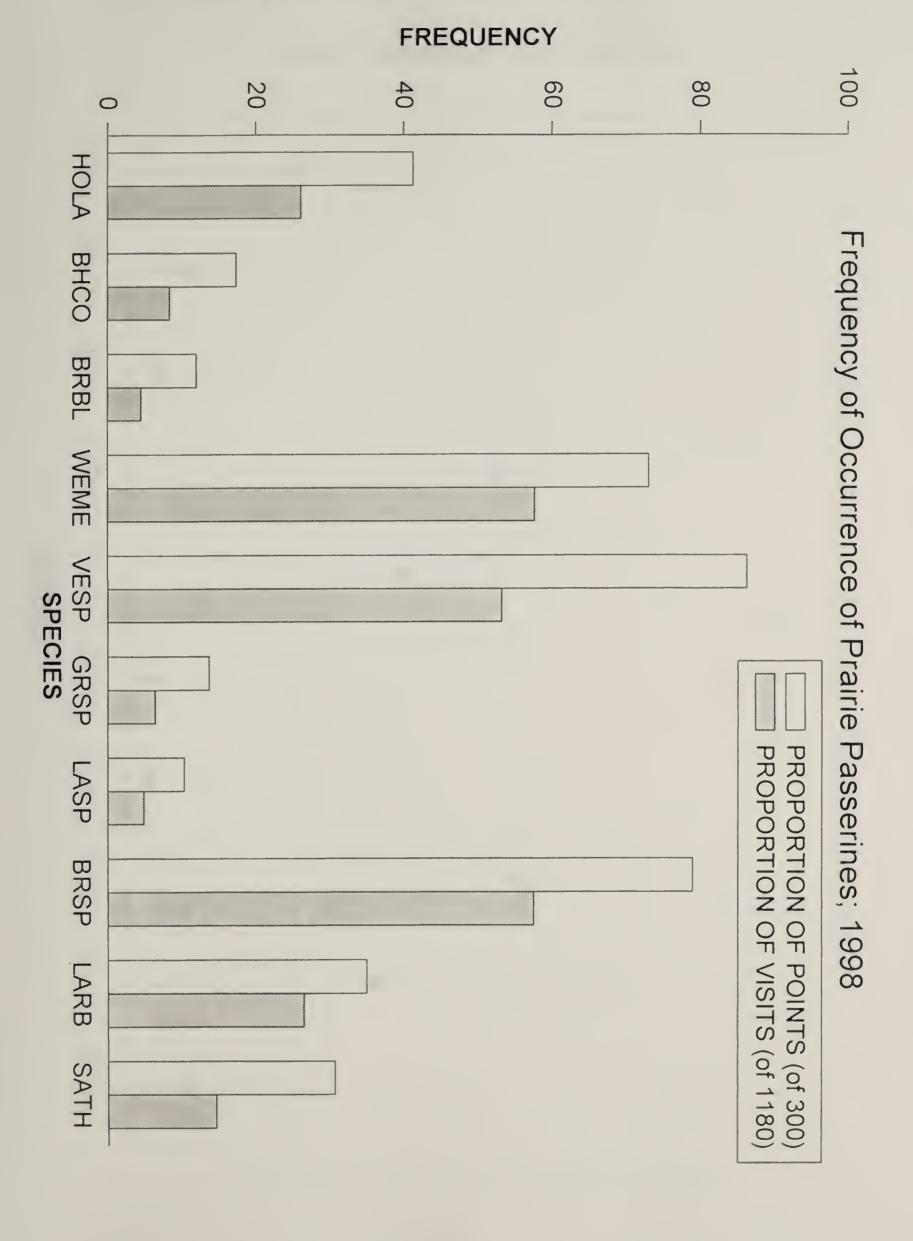
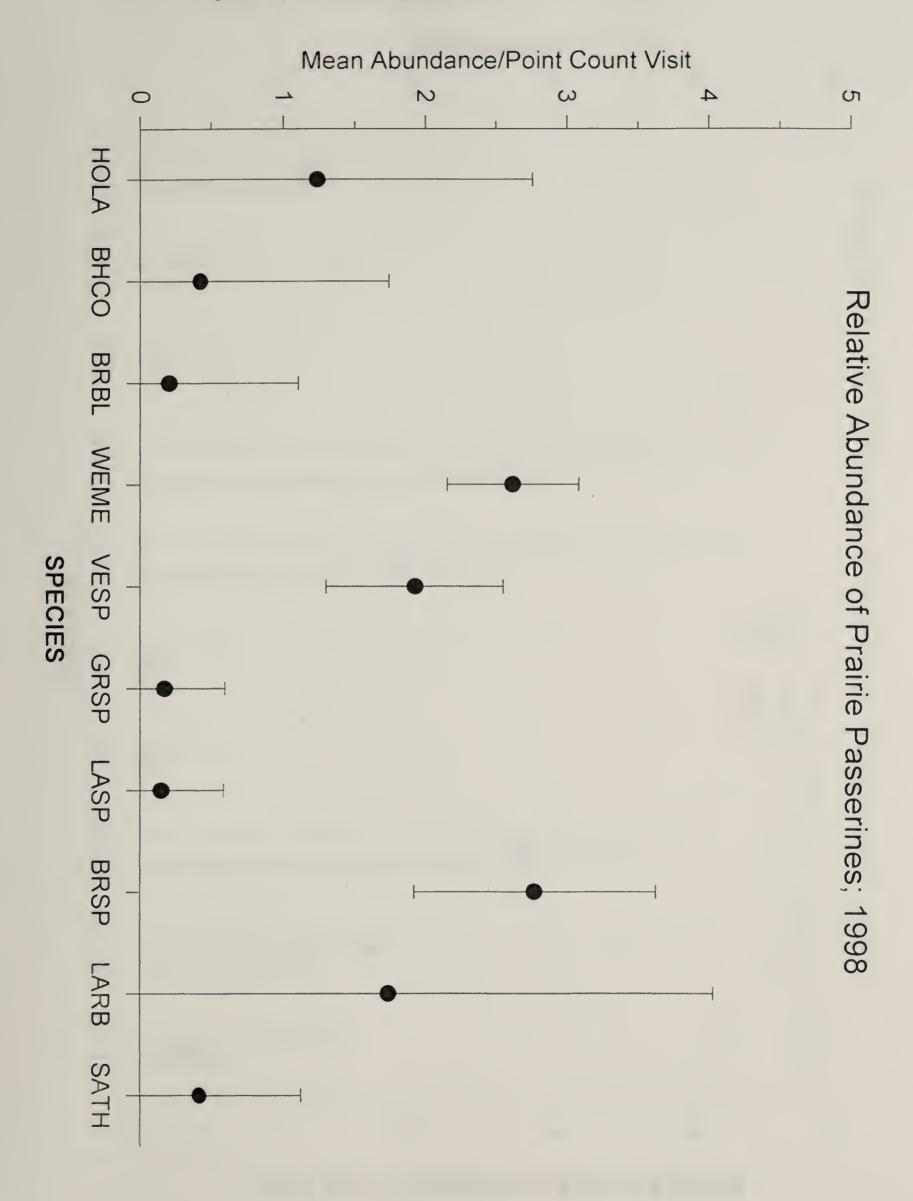
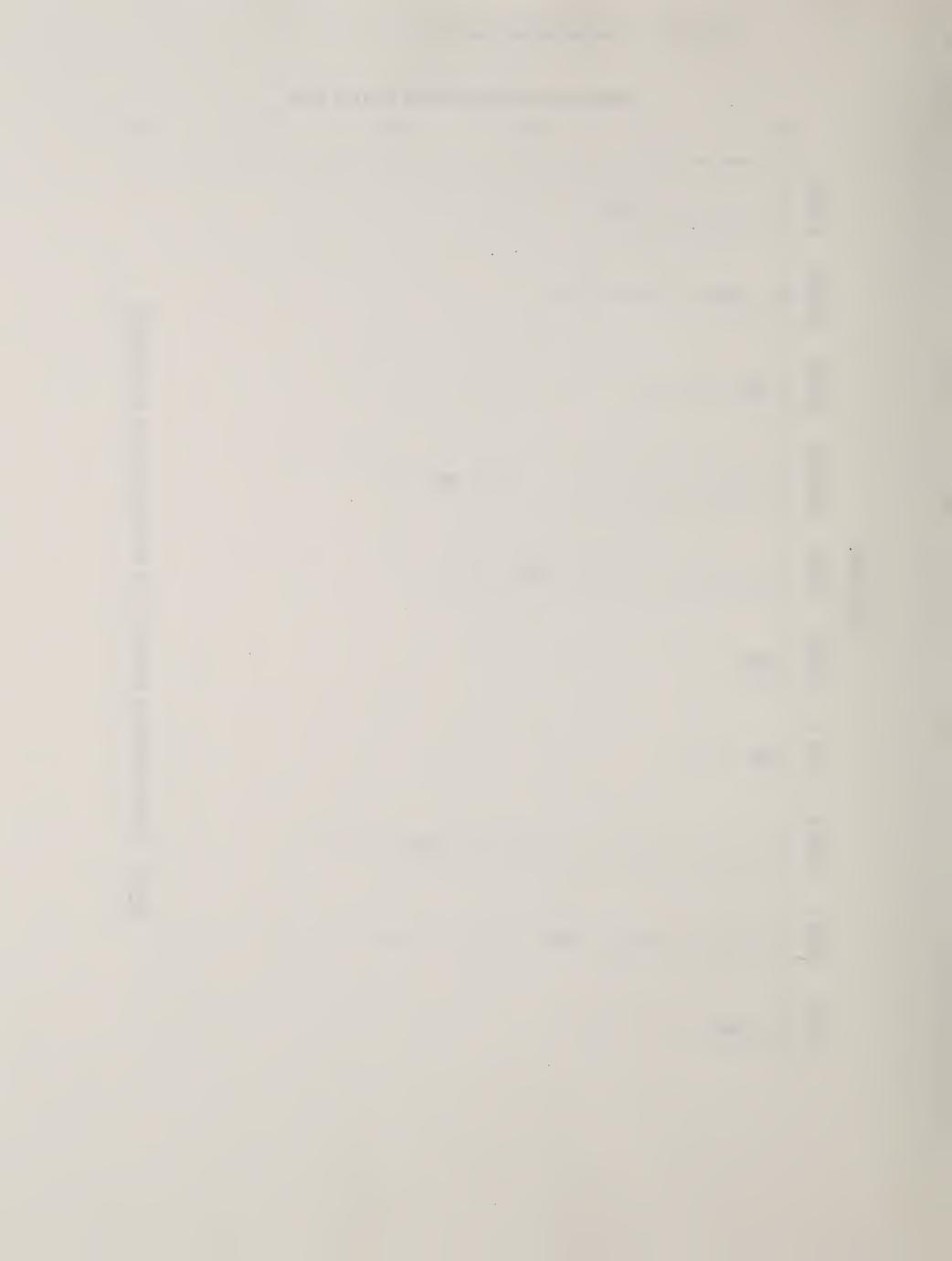




Figure 5. Species Means and SDs





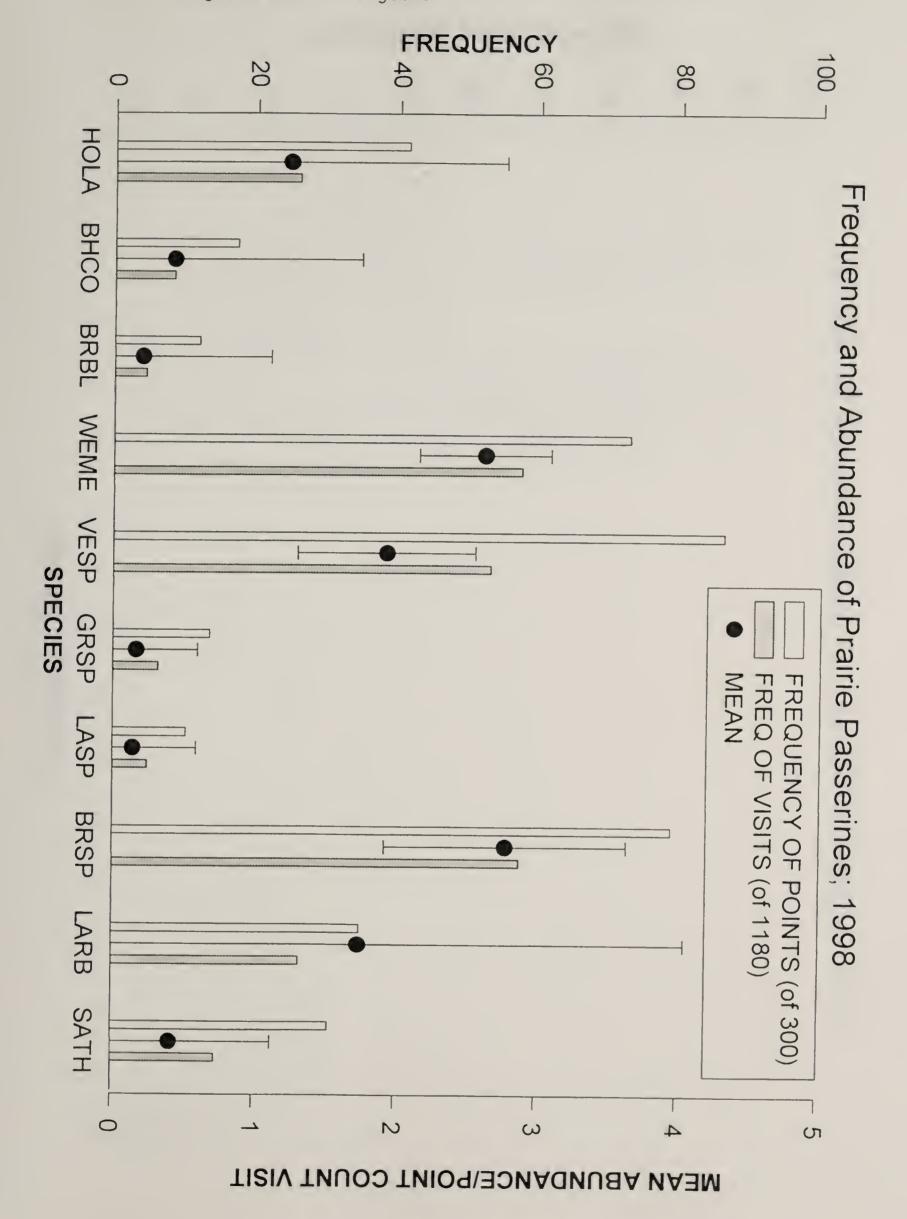
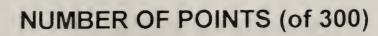




Figure 6. Number of Species Observed at Point Counts



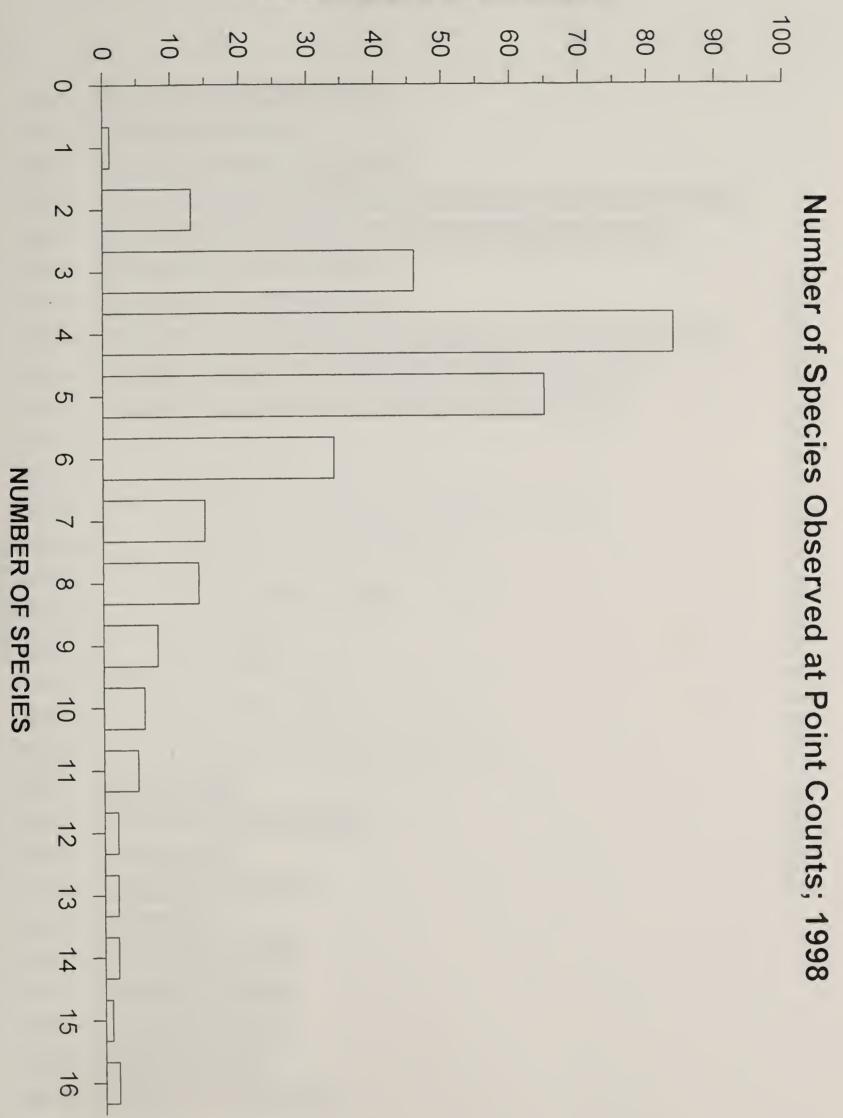




Figure 7. Species Richness Observed by Transects

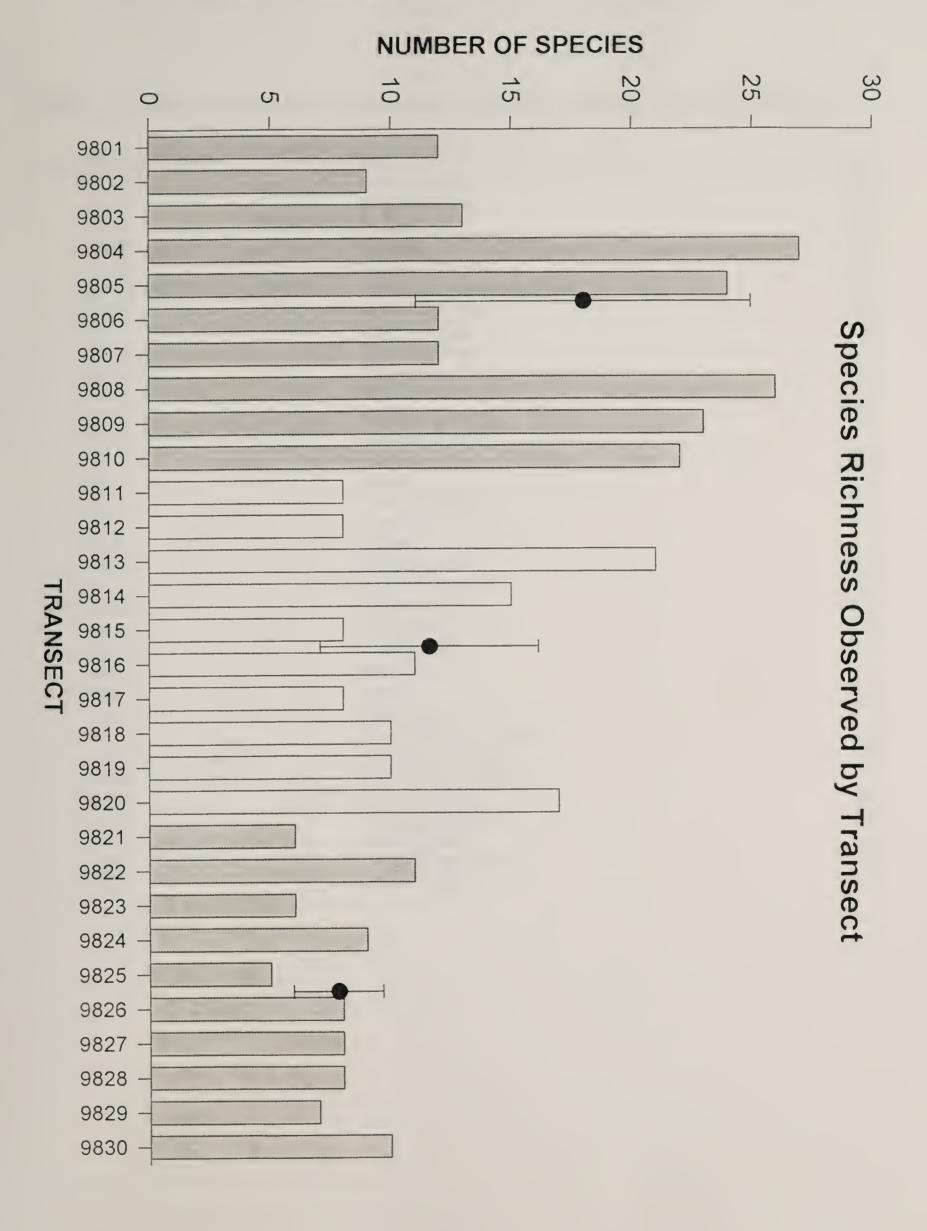




Table 1. Frequency of occurrence of grassland bird species (across all 300 point count sites).

CAGU California Gull 6.67 RBGU Ring-billed Gull 4.67 MALL Mallard 1.67 GADW Gadwall 2.33 AMWI American Wigeon 0.33 AGWT American Green-winged Teal 0.33 BWTE Blue-winged Teal 0.33 CITE Cinnamon Teal 0.67 GBHE Great Blue Heron 0.33 RNPH Ring-necked Pheasant 0.67 WIPH Wilsons Phalarope 1.00 AMAV American Avocet 0.67 COSN Common Snipe 0.67 MAGO Marbled Godwit 0.33 WILL Willet 3.00 UPSA Upland Sandpiper 4.67 LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.03 FEHA <td< th=""><th>SPECIES CODE</th><th>SPECIES</th><th>0/0</th></td<>	SPECIES CODE	SPECIES	0/0
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COSN Common Snipe 0.67 MAGO Marbled Godwit 0.33 WILL Willet 3.00 UPSA Upland Sandpiper 4.67 LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		American Avocet	
MAGO Marbled Godwit 0.33 WILL Willet 3.00 UPSA Upland Sandpiper 4.67 LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Common Snipe	
UPSA Upland Sandpiper 4.67 LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Marbled Godwit	
UPSA Upland Sandpiper 4.67 LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33	WILL	Willet	
LBCU Long-billed Curlew 1.33 KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Upland Sandpiper	
KILL Killdeer 5.00 MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Long-billed Curlew	
MODO Mourning Dove 5.00 NOHA Northern Harrier 4.00 RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Killdeer	
NOHA RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA PRFA Prairie Falcon MERL SEOW Short-eared Owl RHWO CONI COMMON Red-headed Woodpecker COMMON Red-headed Woodpecker Common Nighthawk 0.33 4.00 0.33 0.33 0.33 0.33 0.33 0.33	•	Mourning Dove	
RTHA Red-tailed Hawk 0.33 FEHA Ferruginous Hawk 0.67 GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Northern Harrier	
FEHA GOEA GOIden Eagle PRFA Prairie Falcon MERL Merlin SEOW RHWO Red-headed Woodpecker CONI Ferruginous Hawk O.67 1.67 0.33 0.33 0.33 0.33		Red-tailed Hawk	
GOEA Golden Eagle 1.67 PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Ferruginous Hawk	
PRFA Prairie Falcon 0.33 MERL Merlin 0.33 SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33	GOEA .	Golden Eagle	
MERLMerlin0.33SEOWShort-eared Owl2.67RHWORed-headed Woodpecker0.67CONICommon Nighthawk0.33		Prairie Falcon	
SEOW Short-eared Owl 2.67 RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33	MERL	Merlin	
RHWO Red-headed Woodpecker 0.67 CONI Common Nighthawk 0.33		Short-eared Owl	
CONI Common Nighthawk 0.33		Red-headed Woodpecker	
777		Common Nighthawk	
KUNU Kaloas Hambiengon o	RUHU	Rufous Hummingbird	
EAKI Eastern Kingbird 2.00		Eastern Kingbird	
WEKI Western Kingbird 1.67		Western Kingbird	
SAPH Say's Phoebe 0.33		Say's Phoebe	
WIFL Willow Flycatcher 1.00		Willow Flycatcher	
HOLA Homed Lark 41.33		Horned Lark	41.33



Table 1 (cont.).

SPECIES CODE	SPECIES	º/o
BBMA	Black-billed Magpie	1.33
CORA	Common Raven	2.00
AMCR	American Crow	0.33
EUST	European Starling	0.67
ВНСО	Brown-Headed Cowbird	17.33
YHBL	Yellow-headed Blackbird	1.00
RWBL	Red-winged Blackbird	4.67
WEME	Western Meadowlark	73.00
BUOR	Bullock's Oriole	0.67
BRBL	Brewer's Blackbird	12.00
AMGO	American Goldfinch	3.67
PISI	Pine Siskin	1.67
CCLO	Chestnut-collared Longspur	3.00
MCLO	McCown's Longspur	1.00
VESP	Vesper Sparrow	86.33
SAVS	Savannah Sparrow	9.00
GRSP	Grasshopper Sparrow	13.67
LASP	Lark Sparrow	10.33
WCSP.	White-crowned Sparrow	1.67
CHSP	Chipping Sparrow	1.33
CCSP	Clay-colored Sparrow	1.00
BRSP	Brewer's Sparrow	79.00
FISP	Field Sparrow	2.67
SAGS	Sage Sparrow	1.00
SOSP	Song Sparrow	1.67
LISP	Lincoln's Sparrow	0.33
SPTO	Spotted Towhee	4.67
GTTO	Green-tailed Towhee	0.33
LARB	Lark Bunting	35.00
CLSW	Cliff Swallow	6.00
BARS	Barn Swallow	2.33
BANS	Bank Swallow	0.33
NRWS	Northern Rough-winged Swallow	1.00
	Loggerhead Shrike	0.33
LOSH	Common Yellowthroat	0.33
COYE	Sprague's Pipit	1.00
SPPI		30.67
SATH	Sage Thrasher Brown Thrasher	0.33
BRTH	Rock Wren	4.00
ROWR		2.67
AMRO	American Robin	1.00
MOBL	Mountain Bluebird	1.00



Table 2. Relative abundance of grassland bird species (across all 1180 point count visits).

SPECIES T	otal Points	Species Total	Mean Relative Abundance	
California Gull	23	46	0.0852	0.5450
Ring-billed Gull	14	19	0.0352	0.2372
Mallard	5	8	0.0148	0.1717
Gadwall	7	14	0.0259	0.2498
American Wigeon	1	1	0.0019	0.0430
American Green-winged	2	10	0.0185	0.3547
Blue-winged Teal	1	10	0.0185	0.4303
Cinnamon Teal	2	11	0.0204	0.4324
Great Blue Heron	1	1	0.0019	0.0430
Ring-necked Pheasant	2	2	0.0037	0.0608
Wilsons Phalarope	5	6	0.0111	0.1213
American Avocet	2	3	0.0056	0.0962
Common Snipe	3	5	0.0093	0.1289
Marbled Godwit	1	1	0.0019	0.0430
Willet	10	13	0.0241	0.1862
	17	22	0.0407	0.2402
Upland Sandpiper		5	0.0093	0.1136
Long-billed Curlew	4		0.0500	0.3035
Killdeer	18	27	0.0519	0.3001
Mourning Dove	18	28	0.0222	0.1475
Northern Harrier	12	12		0.0430
Red-tailed Hawk	1	1	0.0019	0.0608
Ferruginous Hawk	2	2	0.0037	0.0959
Golden Eagle	5	5	0.0093	0.0430
Prairie Falcon	1	1	0.0019	
Merlin	1	1	0.0019	0.0430
Short-eared Owl	8	. 9	0.0167	0.1419
Red-headed Woodpecker	- 2	2	0.0037	0.0608
Common Nighthawk	1	1	0.0019	0.0430
Rufous Hummingbird	7	8	0.0148	0.1354
Eastern Kingbird	7	10	0.0185	0.1713
Western Kingbird	5	6	0.0111	0.1213
Say's Phoebe	3	3	0.0056	0.0744
Willow Flycatcher	3	3	0.0056	0.0744
Horned Lark	307	667	1.2352	1.5248
Black-billed Magpie	6	21	0.0389	0.5027
Common Raven	6	8	0.0148	0.1605
American Crow	1	1	0.0019	0.0430
European Starling	2	3	0.0056	0.0962
Brown-Headed Cowbird	99	226	0.4185	1.3202
Yellow-headed Blackbird		14	0.0259	0.3436
Red-winged Blackbird	19	32	0.0593	0.3855
Western Meadowlark	681	1416	2.6222	0.4658
Bullock's Oriole	2	2	0.0037	0.0608
Brewer's Blackbird	53	106	0.1963	0.9088
American Goldfinch	11	12	0.0222	0.1596
Pine Siskin	8	10	0.0185	0.1601
		55	0.1019	0.6203
Chestnut-collared Longs	5 Spui 21	8	0.0148	0.1605
McCown's Longspur	629	1041	1.9278	0.6274
Vesper Sparrow		122	0.2259	0.7614
Savannah Sparrow	61		0.1630	0.4343
Grasshopper Sparrow	75	88	0.1030	U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-U-



Table 2 (cont.).

SPECIES T	otal PointsSp	ecies Total	Mean Relative Abundance	Standard Deviation
Lark Sparrow	57	76	0.1407	0.4503
White-crowned Sparr	row 7	8	0.0148	0.1354
Chipping Sparrow	4	5	0.0093	0.1136
Clay-colored Sparrov	v 3	4	0.0074	0.1052
Brewer's Sparrow	679	1501	2.7796	0.8580
Field Sparrow	14	16	0.0296	0.1903
Sage Sparrow	4	7	0.0130	0.1663
Song Sparrow	11	13	0.0241	0.1760
Lincoln's Sparrow	1	2	0.0037	0 0861
Spotted Towhee	22	29	0.0537	0.2773
Green-tailed Towhee	1	1	0.0019	0.0430
Lark Bunting	312	940	1.7407	2.3066
Cliff Swallow	19	137	0.2537	2.2589
Barn Swallow	8	11	0.0204	0.1866
Bank Swallow	1	1	0.0019	0.0430
Northern Rough-win	iged 3	7	0.0130	0.1970
Loggerhead Shrike	1	1	0.0019	0.0430
Common Yellowthro	oat 3	4	0.0074	0.1052
Sprague's Pipit	3	3	0.0056	0.0744
Sage Thrasher	173	223	0.4130	0.7142
Brown Thrasher	1	1	0.0019	0.0430
Rock Wren	15	16	0.0296	0.1803
American Robin	12	16	0.0296	0.2089
Mountain Bluebird	3	3	0.0056	0 0744



Table 3. Species abundance of grassland birds by transect-1998.

TRANSECT	SPECIES	Adjusted Mean	Standard Deviation
9801	Killdeer	0.67	0.58
9801	Mourning Dove	0.33	0.58
9801	Horned Lark	28.67	32.41
9801	Brown-Headed Cowbird	4.00	5.20
9801	Red-winged Blackbird	0.33	0.58
9801	Western Meadowlark	8.67	9.52
9801	Brewer's Blackbird	2.67	2.52
9801	Chestnut-collared	0.33	0.58
9801	Vesper Sparrow	10.00	10.95
9801	Brewer's Sparrow	3.67	3.42
9801	Lark Bunting	13.00	14.28
9801	Northern Rough-winged	0.33	0.58
9802	Mourning Dove	0.33	0.58
9802	Horned Lark	21.67	24.53
9802	Brown-Headed Cowbird	4.67	3.70
9802	Western Meadowlark	16.00	18.17
9802	Brewer's Blackbird	0.33	0.58
9802	Vesper Sparrow	11.67	12.87
9802	Brewer's Sparrow	28.00	32.09
9802	Cliff Swallow	0.33	0.58
9802	Sage Thrasher	1.00	0.00
9803	California Gull	6.75	4.29
9803	Ring-billed Gull	2.25	0.65
9803	Mallard	0.25	0.50
9803	Upland Sandpiper	0.25	0.50
9803	Mourning Dove	1.00	0.00
9803	Common Nighthawk	0.25	0.50
9803	Eastern Kingbird	0.25	0.50
9803	Horned Lark	0.50	0.58
9803	Brown-Headed Cowbird	2.50	0.58
9803	Western Meadowlark	15.00	15.98
9803	Vesper Sparrow	20.75	22.04
9803	Brewer's Sparrow	34.25	37.10
9803	Lark Bunting	17.75	11.27
9804	California Gull	3.25	1.94
9804	Ring-billed Gull	2.25	1.76
9804	Gadwall	0.75	0.96
9804	American Wigeon	0.25	0.50
9804	Common Snipe	0.25	0.50
9804	Marbled Godwit	0.25	0.50
9804	Willet	0.50	0.58
9804	Upland Sandpiper	0.50	0.58
9804	Killdeer	4.25	3.33
9804	Mourning Dove	2.00	0.82
9804	Northern Harrier	0.25	0.50
9804	Golden Eagle	0.25	0.50
9804	Eastern Kingbird	0.25	0.50
9804	Horned Lark	0.75	0.50



Table 3 (cont.).

TRANSECT		ed Mean	Standard Deviation
9804	Brown-Headed Cowbird	12.25	9.12
9804	Red-winged Blackbird	0.25	0.50
9804	Western Meadowlark	19.00	20.46
9804	Brewer's Blackbird	5.75	5.52
9804	American Goldfinch	0.25	0.50
9804	Vesper Sparrow	6.00	5.89
9804	Savannah Sparrow	0.75	1.50
9804	Chipping Sparrow	0.50	1.00
9804 ·	Brewer's Sparrow	12.25	12.87
9804	Lark Bunting	29.25	31.48
9804	Barn Swallow	0.50	1.00
9804	Northern Rough-winged	0.50	1.00
9804	Sage Thrasher	0.25	0.50
9805	Mallard	0.25	0.50
9805	Gadwall	0.50	1.00
9805	American Green-winged	2.50	3.79
9805	Great Blue Heron	0.25	0.50
9805	Killdeer	0.25	0.50
9805	Golden Eagle	0.25	0.50
9805	Eastern Kingbird	0.75	0.96
9805	Brown-Headed Cowbird	1.50	1.29
9805	Red-winged Blackbird	0.50	1.00
9805	Western Meadowlark	5.75	5.87
9805	Brewer's Blackbird	1.00	0.00
9805	American Goldfinch	1.25	0.50
9805	Pine Siskin	2.50	1.91
9805	Vesper Sparrow	18.00	19.13
9805	Savannah Sparrow	0.25	0.50
9805	White-crowned Sparrow	0.75	0.50
9805	Brewer's Sparrow	25.25	27.14
9805	Song Sparrow	1.50	0.58
9805	Green-tailed Towhee	0.25	0.50
9805	Barn Swallow	0.25	0.50
9805	Northern Rough-winged	1.00	2.00
9805	Common Yellowthroat	1.00	0.82
9805	Sage Thrasher	2.75	2.25
9805	American Robin	1.00	0.82
9806	Mourning Dove	0.50	1.00
9806	Golden Eagle	0.50	0.58
9806	Merlin	0.25	0.50
9806	Short-eared Owl	0.25	0.50
9806	Western Meadowlark	16.50	· 17.69
9806	American Goldfinch	0.25	0.50
9806	Vesper Sparrow	12.75	13.41
9806	Brewer's Sparrow	35.75	38.62
9806	Spotted Towhee	0.50	
9806	Lark Bunting	0.25	
9806	Sage Thrasher	1.50	0.58



Table 3 (cont.).

TRANSECT	SPECIES A	djusted Mean	Standard Deviation
9806	Rock Wren	0.25	0.50
9807	Killdeer	0.75	0.50
9807	Mourning Dove	0.50	1.00
9807	Northern Harrier	0.25	0.50
9807	Short-eared Owl	0.25	0.50
9807	Horned Lark	1.25	0.65
9807	Brown-Headed Cowb	ird 1.25	1.26
9807	Western Meadowlark	30.50	32.93
9807	American Goldfinch	0.25	0.50
9807	Vesper Sparrow	12.00	12.68
9807	Brewer's Sparrow	25.75	27.68
9807	Lark Bunting	. 0.50	0.58
9807	Cliff Swallow	0.50	1.00
	0.116 1. 0.11	1.25	0.65
9808	California Gull	1.25	0.50
9808	Ring-billed Gull	0.25	1.71
9808	Gadwall	1.75	5.00
9808	Blue-winged Teal	2.50	
9808	Cinnamon Teal	2.75	4.86
9808	Wilsons Phalarope	1.50	0.58
9808	American Avocet	0.75	0.96
9808	Willet	2.00	1.15
9808	Upland Sandpiper	2.75	1.94
9808	Killdeer	0.50	1.00
9808	Northern Harrier	0.75	0.50
9808	Short-eared Owl	0.75	0.50
9808	Common Raven	1.25	1.26
9808	Brown-Headed Cowl		16.07
9808	Yellow-headed Black		2.24
9808	Red-winged Blackbir		3.42
9808	Western Meadowlark		28.79
9808	Brewer's Blackbird	5.75	5.06
9808	Vesper Sparrow	7.75	7.29
9808	Savannah Sparrow	19.00	20.00
9808	Grasshopper Sparrov		0.50
9808	Clay-colored Sparrov		0.96
9808	Brewer's Sparrow	8.00	7.44
9808	Lark Bunting	6.75	5.39 16.44
9808	Cliff Swallow	29.75	0.50
9808	Barn Swallow	0.25	0.30
9809	California Gull	0.25	0.50
9809	Mallard	1.00	1.41
9809	Gadwall	0.50	1.00
9809	Willet	0.25	0.50
9809	Upland Sandpiper	1.25	0.50
9809	Killdeer	0.25	0.50
9809	Northern Harrier	0.25	0.50
9809	Ferruginous Hawk	0.25	0.50
9809	Horned Lark	8.25	8.27
9809	European Starling	0.50	1.00



Table 3 (cont.).

TRANSECT	SPECIES A	Adjusted Mean	Standard Deviation
9809	Brown-Headed Cowb	ird 10.75	8.43
9809	Red-winged Blackbird	0.50	0.58
9809	Western Meadowlark	16.00	16.73
9809	Brewer's Blackbird	2.00	2.71
9809	American Goldfinch	0.25	0.50
9809	Chestnut-collared	13.50	13.13
9809	Vesper Sparrow	7.75	7.94
9809	Savannah Sparrow	0.25	0.50
9809	Chipping Sparrow	0.25	0.50
9809	Brewer's Sparrow	19.50	20.45
9809	Lark Bunting	42.50	45.71
9809	Barn Swallow	1.50	1.00
9809	Sprague's Pipit	0.25	0.50
9810	Common Snipe	1.00	1.15
9810	Killdeer	0.25	0.50
9810	Northern Harrier	0.50	0.58
9810	Red-tailed Hawk	0.25	0.50
9810	Ferruginous Hawk	0.25	0.50
9810	Prairie Falcon	0.25	0.50
9810	Short-eared Owl	0.50	1.00
9810	Black-billed Magpie	4.75	3.86
9810	American Crow	0.25	0.50
9810	European Starling	0.25	0.50
9810	Brown-Headed Cowl	oird 6.00	5.35
9810	Western Meadowlark		0.50
9810	Brewer's Blackbird	4.25	2.10
9810	American Goldfinch	0.50	0.58
9810	Vesper Sparrow	12.75	13.51
9810	Savannah Sparrow	4.50	3.51
9810	White-crowned Span	row 1.25	0.50
9810	Brewer's Sparrow	29.00	31.16
9810	Song Sparrow	1.50	1.00
9810	Lincoln's Sparrow	0.50	1.00
9810	Barn Swallow	0.25	0.50
9810	American Robin	0.25	0.50
9811	Horned Lark	8.00	8.12
9811	Western Meadowlarl	16.50	17.88
9811	Brewer's Blackbird	3.75	2.06
9811	Vesper Sparrow	3.50	3.32
9811	Lark Sparrow	0.75	0.50
9811	Brewer's Sparrow	11.75	12.37
9811	Lark Bunting	2.00	4.00
9811	Sage Thrasher	1.25	0.65
9812	Short-eared Owl	0.25	0.50
9812	Horned Lark	8.00	7.70
9812	Western Meadowlar	k 10.25	10.91
9812	McCown's Longspur	0.25	0.50
9812	Vesper Sparrow	3.00	2.83



Table 3 (cont.).

TRANSECT	SPECIES Adjus	ted Mean	Standard Deviation
9812	Brewer's Sparrow	5.50	5.51
9812	Lark Bunting	0.25	0.50
9812	Sage Thrasher	0.75	0.50
9813	Mallard	0.50	1.00
9813	Ring-necked Pheasant	0.50	0.58
9813	Mourning Dove	0.50	1.00
9813	Red-headed Woodpecker	0.25	0.50
9813	Eastern Kingbird	0.50	1.00
9813	Western Kingbird	0.75	0.96
9813	Brown-Headed Cowbird	0.25	0.50
9813	Western Meadowlark	24.25	25.79
9813	Bullock's Oriole	0.25	0.50
9813	Vesper Sparrow	0.50	1.00
9813	Savannah Sparrow	0.25	0.50
9813	Grasshopper Sparrow	6.00	5.94
9813	Lark Sparrow	3.25	2.66
9813	Clay-colored Sparrow	0.25	0.50
9813	Brewer's Sparrow	2.75	1.94
9813	Field Sparrow	1.00	0.00
9813	Song Sparrow	0.25	0.50
9813	Spotted Towhee	4.50	4.20
9813	Lark Bunting	26.25	27.60
9813	Brown Thrasher	0.25	0.50
9813	American Robin	0.25	0.50
9814	Upland Sandpiper	0.25	0.50
9814	Mourning Dove	1.00	1.15
9814	Red-headed Woodpecker	0.25	0.50
9814	Eastern Kingbird	0.50	1.00
9814	Western Kingbird	0.75	0.50
9814	Western Meadowlark	17.00	18.18
9814	Vesper Sparrow	0.25	0.50
9814	Grasshopper Sparrow	3.75	3.43
9814	Lark Sparrow	0.25	0.50
9814	Brewer's Sparrow	0.25	0.50
9814	Field Sparrow	0.50	1.00
9814	Spotted Towhee	1.00	0.82
9814	Lark Bunting	34.50	37.26
9814	Sprague's Pipit	0.50	0.58
9814	American Robin	1.75	0.50
9815	Horned Lark	0.75	0.96
9815	Western Meadowlark	25.50	27.50
9815	Brewer's Blackbird	0.25	0.50
9815	Vesper Sparrow	1.75	1.04
9815	Grasshopper Sparrow	3.50	3.21
9815	Lark Sparrow	0.75	0.50
9815	Brewer's Sparrow	7.00	6.98
9815	Lark Bunting	14.25	14.85



Table 3 (cont.).

TRANSECT	SPECIES	Adjusted Mean	Standard Deviation
9816	Upland Sandpiper	0.25	0.50
9816	Mourning Dove	0.25	0.50
9816	Horned Lark	1.25	0.65
9816	Western Meadowlark	25.25	27.42
9816	Vesper Sparrow	1.50	0.58
9816	Grasshopper Sparrov		3.83
9816	Lark Sparrow	0.50	0.58
9816	Brewer's Sparrow	4.50	4.04
9816	Field Sparrow	1.50	0.58
9816 ·	Lark Bunting	20.25	21.81
9816	Loggerhead Shrike	0.25	0.50
9817	Northern Harrier	0.25	0.50
9817	Red-winged Blackbir	rd 2.00	2.00
9817	Western Meadowlark	k 29.25	31.77
9817	Brewer's Blackbird	0.25	0.50
9817	Vesper Sparrow	8.50	8.70
9817	Grasshopper Sparrov	<i>x</i> 2.00	1.63
9817	Brewer's Sparrow	7.25	7.38
9817	Sage Thrasher	0.25	0.50
9818	Northern Harrier	0.25	0.50
9818	Western Meadowlark	k 19.00	20.28
9818	Brewer's Blackbird	0.50	1.00
9818	Vesper Sparrow	11.75	12.48
9818	Grasshopper Sparrov	w 2.00	1.63
9818	Brewer's Sparrow	0.75	0.96
9818	Spotted Towhee	0.25	0.50
9818	Lark Bunting	0.25	0.50
9818	American Robin	0.25	0.50
9818	Mountain Bluebird	0.25	0.50
9819	Upland Sandpiper	0.25	0.50
9819	Western Meadowlar	k 15.50	16.68
9819	Vesper Sparrow	9.25	9.61
9819	Grasshopper Sparrov	w 0.50	0.58
9819	Lark Sparrow	7.25	7.24
9819	Brewer's Sparrow	8.00	7.79
9819	Spotted Towhee	0.75	0.96
9819	· Lark Bunting	. 10.75	9.37
9819	Sage Thrasher	0.25	0.50
9819	Mountain Bluebird	0.25	0.50
9820	Mourning Dove	0.75	0.96
9820	Eastern Kingbird	0.25	0.50
9820	Say's Phoebe	0.75	0.50
9820	Western Meadowlar	k 11.50	12.32
9820	Bullock's Oriole	0.25	0.50
9820	Brewer's Blackbird	0.50	1.00
9820	American Goldfinch	0.25	0.50
9820	Vesper Sparrow	7.75	7.82



Table 3 (cont.)

TRANSECT	SPECIES	Adjusted Mean	Standard Deviation
9820	Lark Sparrow	6.25	6.30
9820	Chipping Sparrow	0.25	0.50
9820	Brewer's Sparrow	2.00	1.41
9820	Field Sparrow	1.00	0.00
9820	Spotted Towhee	0.25	0.50
9820	Lark Bunting	19.75	20.28
9820	Cliff Swallow	0.50	1.00
9820	Bank Swallow	0.25	0.50
9820	American Robin	0.25	0.50
9821	Rufous Hummingbird	d 0.25	0.50
9821	Western Meadowlark	4.50	4.43
9821	Vesper Sparrow	13.00	13.76
9821	Brewer's Sparrow	14.00	14.79
9821	Sage Thrasher	3.75	3.62
9821	Rock Wren	0.75	0.50
9822	Rufous Hummingbird	i 1.50	0.58
9822	Black-billed Magpie	0.50	0.58
9822	Common Raven	0.25	0.50
9822	Western Meadowlark	0.75	0.50
9822	Vesper Sparrow	9.50	9.68
9822	Brewer's Sparrow	12.00	12.49
9822	Sage Sparrow	0.25	0.50
9822	Cliff Swallow	0.25	0.50
9822	Sage Thrasher	2.75	2.40
9822	Rock Wren	. 1.50	1.00
9822	Mountain Bluebird	0.25	0.50
9823	Horned Lark	10.75	10.60
9823	Western Meadowlark	0.25	0.50
9823	Brewer's Blackbird	0.25	0.50
9823	Vesper Sparrow	10.75	11.18
9823	Brewer's Sparrow	15.75	16.71
9823	Sage Thrasher	6.00	5.89
9824	Rufous Hummingbird	d 0.25	0.50
9824	Willow Flycatcher	0.50	0.58
9824	Horned Lark	5.50	5.51
9824	Western Meadowlarl	k 3.00	2.71
9824	Vesper Sparrow	11.25	11.79
9824	Brewer's Sparrow	11.75	12.51
9824	Cliff Swallow	0.25	0.50
9824	Sage Thrasher	8.00	8.04
9824	American Robin	0.25	0.50
9825	Horned Lark	8.50	8.47
9825	Western Meadowlar	k 0.50	0.58
9825	Vesper Sparrow	9.25	9.58
9825	Brewer's Sparrow	6.50	6.08
9825	Sage Thrasher	3.75	3.52



Table 3 (cont.).

TRANSECT	SPECIES	Adjusted Mean	Standard Deviation
9826	Northern Harrier	0.25	0.50
9826	Horned Lark	11.75	12.24
9826	Common Raven	0.25	0.50
9826	Western Meadowlar	k 1.00	0.00
9826	Vesper Sparrow	13.50	13.80
9826	Brewer's Sparrow	10.25	10.48
9826	Cliff Swallow	0.25	0.50
9826	Sage Thrasher	7.00	7.07
9827 .	Long-billed Curlew	0.25	0.50
9827	Northern Harrier	0.25	0.50
9827	Horned Lark	26.25	27.62
9827	McCown's Longspur	1.50	1.00
9827	Vesper Sparrow	9.75	10.22
9827	Savannah Sparrow	3.25	2.53
9827	Chipping Sparrow	0.25	0.50
9827	Cliff Swallow	1.50	3.00
9828	Long-billed Curlew	1.00	0.82
9828	Short-eared Owl	0.25	0.50
9828	Homed Lark	30.00	32.51
9828	Common Raven	0.25	0.50
9828	McCown's Longspur	0.25	0.50
9828	Vesper Sparrow	8.00	7.83
9828	Savannah Sparrow	2.25	1.04
9828	Cliff Swallow	0.50	1.00
0020	Hanned Lonla	2.25	1.22
9829	Homed Lark	2.25	1.32
9829	Vesper Sparrow	7.00	7.16
9829	Brewer's Sparrow	21.00	22.38
9829	Sage Sparrow	1.25	1.50
9829	Cliff Swallow	0.50	1.00
9829	Sage Thrasher	10.25	10.41
9829	Rock Wren	0.50	0.58
9830	Willet	0.50	1.00
9830	Golden Eagle	0.25	0.50
9830	Willow Flycatcher	0.25	0.50
9830	Horned Lark	5.25	4.80
9830	Western Meadowlar		1.41
9830	Vesper Sparrow	6.50	6.30
9830	Brewer's Sparrow	20.75	22.46
9830	Sage Sparrow	0.25	0.50
9830	Sage Thrasher	6.50	6.61
9830	Rock Wren	1.00	0.82
	10010 111011	1.00	0.02



Table 4. Cover classes contained within 300 point count locations; 1998



Table 5. Frequency of Occurrence by Transect

TRANSECT	SPECIES	FREQUENCY OF OCCURRENCE (%)
9801	Killdeer	6.67
9801	Mourning Dove	3.33
9801	Horned Lark	83.33
9801	Brown-Headed Co	owbird 10.00
9801	Red-winged Black	bird 3.33
9801	Western Meadowl	ark 60.00
9801	Brewer's Blackbird	6.67
9801	Chestnut-collared	3.33
9801	Vesper Sparrow	63.33
9801 ·	Brewer's Sparrow	26.67
9801	Lark Bunting	63.33
9801	Northern Rough-v	vinged 3.33
9802	Mourning Dove	3.33
9802	Horned Lark	86.67
9802	Brown-Headed Co	owbird 26.67
9802	Western Meadowl	ark 80.00
9802	Brewer's Blackbire	d 3.33
9802	Vesper Sparrow	70.00
9802	Brewer's Sparrow	100.00
9802	Cliff Swallow	3.33
9802	Sage Thrasher	10.00
9803	California Gull	25.00
9803	Ring-billed Gull	12.50
9803	Mallard	2.50
9803	Upland Sandpiper	
9803	Mourning Dove	10.00
9803	Common Nightha	
9803	Eastern Kingbird	2.50
9803	Horned Lark	5.00
9803	Brown-Headed C	
9803	Western Meadow	
9803	Vesper Sparrow	85.00
9803	Brewer's Sparrow	
9803	Lark Bunting	47.50
9804	California Gull	17.50
9804	Ring-billed Gull	20.00
9804	Gadwall	5.00
9804	American Wigeor	
9804	Common Snipe	2.50
9804	Marbled Godwit	2.50
9804	Willet	5.00
9804	Upland Sandpiper	
9804	Killdeer	22.50
9804	Mourning Dove	10.00
9804	Northern Harrier	2.50
9804	Golden Eagle	2.50
9804	Eastern Kingbird	2.50
9804	Horned Lark	7.50



TRANSECT	SPECIES FREQUENCY OF OCCURRENCE (%)		
9804	Brown-Headed Cowbird	50.00	
9804	Red-winged Blackbird	2.50	
9804	Western Meadowlark	92.50	
9804	Brewer's Blackbird	40.00	
9804	American Goldfinch	2.50	
9804	Vesper Sparrow	42.50	
9804	Savannah Sparrow	2.50	
9804	Chipping Sparrow	2.50	
9804	Brewer's Sparrow	72.50	
9804	Lark Bunting	92.50	
9804	Barn Swallow	2.50	
9804	Northern Rough-winged	2.50	
9804	Sage Thrasher	2.50	
0005	Mallard	2.50	
9805		2.50	
9805	Gadwall	5.00	
9805	American Green-winged	3.00	
9805	Great Blue Heron2.50	2.50	
9805	Killdeer		
9805	Golden Eagle	2.50	
9805	Eastern Kingbird	5.00	
9805	Brown-Headed Cowbird	7.50	
9805	Red-winged Blackbird	2.50	
9805	Western Meadowlark	50.00	
9805	Brewer's Blackbird	10.00	
9805	American Goldfinch	10.00	
9805	Pine Siskin	20.00	
9805	Vesper Sparrow	87.50	
9805	Savannah Sparrow	2.50	
9805	White-crowned Sparrow	7.50	
9805	Brewer's Sparrow	95.00	
9805	Song Sparrow	10.00	
9805	Green-tailed Towhee	2.50	
9805	Barn Swallow	2.50	
9805	Northern Rough-winged	2.50	
9805	Common Yellowthroat	7.50	
9805	Sage Thrasher	22.50	
9805	American Robin	7.50	
9806	Mourning Dove	2.50	
9806	Golden Eagle	5.00	
9806	Merlin	2.50	
9806	Short-eared Owl	2.50	
9806	Western Meadowlark	85.00	
9806	American Goldfinch	2.50	
9806	Vesper Sparrow	70.00	
9806	Brewer's Sparrow	100.00	
	Spotted Towhee	5.00	
9806	Lark Bunting	2.50	
9806		12.50	
9806	Sage Thrasher	2.50	
9806	Rock Wren	2.30	



TRANSECT	SPECIES FR	EQUENCY OF OCCURRENCE (%)
9807	Killdeer	7.50
9807	Mourning Dove	2.50
9807	Northern Harrier	2.50
9807	Short-eared Owl	2.50
9807	Horned Lark	12.50
9807	Brown-Headed Cowbi	rd 7.50
9807	Western Meadowlark	97.50
9807	American Goldfinch	2.50
9807	Vesper Sparrow	70.00
9807	Brewer's Sparrow	92.50
9807	Lark Bunting	5.00
9807	Cliff Swallow	2.50
9808	California Gull	12.50
9808	Ring-billed Gull	2.50
9808	Gadwall	7.50
9808	Blue-winged Teal	2.50
9808	Cinnamon Teal	5.00
9808	· Wilson's Phalarope	12.50
9808	American Avocet	5.00
9808	Willet	15.00
9808	Upland Sandpiper	17.50
9808	Killdeer	2.50
9808	Northern Harrier	7.50
9808	Short-eared Owl	7.50
9808	Common Raven	7.50
9808	Brown-Headed Cowb	ird 67.50
9808	Yellow-headed Blackl	bird 12.50
9808	Red-winged Blackbird	25.00
9808	Western Meadowlark	100.00
9808	Brewer's Blackbird	20.00
9808	Vesper Sparrow	37.50
9808	Savannah Sparrow	77.50
9808	Grasshopper Sparrow	2.50
9808	Clay-colored Sparrow	
9808	Brewer's Sparrow	40.00
9808	Lark Bunting	35.00
9808	Cliff Swallow	25.00
9808	Barn Swallow	2.50
9809	California Gull	2.50
9809	Mallard	5.00
9809	Gadwall	2.50
9809	Willet	2.50
9809	Upland Sandpiper	10.00
9809	Killdeer	2.50
9809	Northern Harrier	2.50
9809	Ferruginous Hawk	2.50
9809	Horned Lark	52.50
9809	European Starling	2.50
9809	Brown-Headed Cowl	



TRANSECT	SPECIES FREQ	UENCY OF OCCURRENCE (%)
9809	Red-winged Blackbird	5.00
9809	Western Meadowlark	77.50
9809	Brewer's Blackbird	7.50
9809	American Goldfinch	2.50
9809	Chestnut-collared	50.00
9809	Vesper Sparrow	55.00
9809	Savannah Sparrow	2.50
9809	Chipping Sparrow	2.50
9809	Brewer's Sparrow	82.50
9809	Lark Bunting	100.00
9809	Barn Swallow	10.00
9809	Sprague's Pipit	2.50
9810	Common Snipe	5.00
9810	Killdeer	2.50
9810	Northern Harrier	5.00
9810	Red-tailed Hawk	2.50
9810	Ferruginous Hawk	2.50
9810	Prairie Falcon	2.50
9810	Short-eared Owl	2.50
9810	Black-billed Magpie	10.00
9810	American Crow	2.50
9810	European Starling	2.50
9810	Brown-Headed Cowbird	32.50
9810	Western Meadowlark	2.50
9810	Brewer's Blackbird	20.00
9810	American Goldfinch	5.00
9810	Vesper Sparrow	77.50
9810	Savannah Sparrow	27.50
9810	White-crowned Sparrow	10.00
9810	Brewer's Sparrow	85.00
9810	Song Sparrow	15.00
9810	Lincoln's Sparrow	2.50
9810	Barn Swallow	2.50
9810	American Robin	2.50
9811	Horned Lark	52.50
9811	Western Meadowlark	92.50
9811	Brewer's Blackbird	15.00
9811	Vesper Sparrow	32.50
9811	Lark Sparrow	7.50
9811	Brewer's Sparrow	72.50
9811	Lark Bunting	2.50
9811	Sage Thrasher	12.50
9812	Short-eared Owl.	2.50
9812	Horned Lark	40.00
9812	Western Meadowlark	77.50
9812	McCown's Longspur	2.50
9812	Vesper Sparrow	30.00
9812	Brewer's Sparrow	45.00



TRANSECT	SPECIES FREQUI	ENCY OF OCCURRENCE (%)
9812	Lark Bunting	2.50
9812	Sage Thrasher	7.50
9813	Mallard	2.50
9813	Ring-necked Pheasant	5.00
9813	Mourning Dove	2.50
9813	Red-headed Woodpecker	2.50
9813	Eastern Kingbird	2.50
9813	Western Kingbird	5.00
9813	Brown-Headed Cowbird	2.50
9813	Western Meadowlark	95.00
9813	Bullock's Oriole	2.50
9813	Vesper Sparrow	2.50
9813	Savannah Sparrow	2.50
9813	Grasshopper Sparrow	45.00
9813	Lark Sparrow	25.00
9813	Clay-colored Sparrow	2.50
9813	Brewer's Sparrow	20.00
9813	Field Sparrow	10.00
9813	Song Sparrow	2.50
9813	Spotted Towhee	32.50
9813	Lark Bunting	82.50
9813	Brown Thrasher	2.50
9813	American Robin	2.50
9814	Upland Sandpiper	2.50
9814	Mourning Dove	5.00
9814	Red-headed Woodpecker	2.50
9814	Eastern Kingbird	2.50
9814	Western Kingbird	7.50
9814	Western Meadowlark	85.00
9814	Vesper Sparrow	2.50
9814	Grasshopper Sparrow	30.00
9814	Lark Sparrow	2.50
9814	Brewer's Sparrow	2.50
9814	Field Sparrow	2.50
9814	Spotted Towhee	7.50
9814	Lark Bunting	97.50
9814	Sprague's Pipit	5.00
9814	American Robin	10.00
9815	Horned Lark	5.00
9815	Western Meadowlark	97.50
9815	Brewer's Blackbird	2.50
9815	Vesper Sparrow	15.00
9815	Grasshopper Sparrow	30.00
9815	Lark Sparrow	7.50
9815	Brewer's Sparrow	45.00
9815	Lark Bunting	67.50



TRANSECT	SPECIES FREQUE	UENCY OF OCCURRENCE (%)
9816	Upland Sandpiper	2.50
9816	Mourning Dove	2.50
9816	Horned Lark	12.50
9816	Western Meadowlark	100.00
9816	Vesper Sparrow	12.50
9816	Grasshopper Sparrow	35.00
9816	Lark Sparrow	5.00
9816	Brewer's Sparrow	30.00
9816	Field Sparrow	12.50
9816	Lark Bunting	90.00
9816	Loggerhead Shrike	2.50
9817	Northern Harrier	2.50
9817	Red-winged Blackbird	10.00
9817	Western Meadowlark	100.00
9817	Brewer's Blackbird	2.50
9817	Vesper Sparrow	57.50
9817	Grasshopper Sparrow	20.00
9817	Brewer's Sparrow	52.50
9817	Sage Thrasher	2.50
9818	Northern Harrier	2.50
9818	Western Meadowlark	80.00
9818	Brewer's Blackbird	2.50
9818	Vesper Sparrow	77.50
9818	Grasshopper Sparrow	20.00
9818	Brewer's Sparrow	5.00
9818	Spotted Towhee	2.50
9818	Lark Bunting	2.50
9818	American Robin	2.50
9818	Mountain Bluebird	2.50
9819	Upland Sandpiper	2.50
9819	Western Meadowlark	92.50
9819	Vesper Sparrow	62.50
9819	Grasshopper Sparrow	5.00
9819	Lark Sparrow	47.50
9819	Brewer's Sparrow	47.50
9819	Spotted Towhee	5.00
9819	Lark Bunting	30.00
9819	Sage Thrasher	2.50
9819	Mountain Bluebird	2.50
9820	Mourning Dove	5.00
9820	Eastern Kingbird	2.50
9820	Say's Phoebe	7.50
9820	Western Meadowlark	82.50
9820	Bullock's Oriole	2.50
9820	Brewer's Blackbird	2.50
9820	American Goldfinch	2.50
9820	Vesper Sparrow	50.00
7020	у сары орштон	23.00



FREQUENCY OF OCCURRENCE BY TRANSECT

TRANSECT	SPECIES F	FREQUENCY OF OCCURRENCE (%)
9820	Lark Sparrow	47.50
9820	Chipping Sparrow	2.50
9820	Brewer's Sparrow	17.50
9820	Field Sparrow	10.00
9820	Spotted Towhee	2.50
9820	Lark Bunting	75.00
9820	Cliff Swallow	2.50
9820	Bank Swallow	2.50
9820	American Robin	2.50
9821	Rufous Hummingbir	
9821	Western Meadowlar	k 40.00
9821	Vesper Sparrow	75.00
9821	Brewer's Sparrow	87.50
9821	Sage Thrasher	35.00
9821	Rock Wren	7.50
9822	Rufous Hummingbir	d 12.50
9822	Black-billed Magpie	5.00
9822	Common Raven	2.50
9822	Western Meadowlar	k 7.50
9822	Vesper Sparrow	62.50
9822	Brewer's Sparrow	70.00
9822	Sage Sparrow	2.50
9822	Cliff Swallow	2.50
9822	Sage Thrasher	25.00
	Rock Wren	15.00
9822		2.50
9822	Mountain Bluebird	2.50
9823	Horned Lark	47.50
9823	Western Meadowlar	·k 2.50
9823	Brewer's Blackbird	2.50
9823	Vesper Sparrow	67.50
9823	Brewer's Sparrow	82.50
9823	Sage Thrasher	47.50
9824	Rufous Hummingbi	rd 2.50
9824	Willow Flycatcher	5.00
9824	Horned Lark	45.00
9824	Western Meadowla	rk 27.50
9824	Vesper Sparrow	67.50
9824	Brewer's Sparrow	77.50
9824	Cliff Swallow	2.50
9824	Sage Thrasher	52.50
9824	American Robin	2.50
9825	Horned Lark	50.00
9825	Western Meadowla	rk 5.00
9825	Vesper Sparrow	62.50
9825	Brewer's Sparrow	37.50
9825	Sage Thrasher	32.50



FREQUENCY OF OCCURRENCE BY TRANSECT

TRANSECT	SPECIES F	REQUENCY OF OCCURRENCE (%)
9826	Northern Harrier	2.50
9826	Horned Lark	65.00
9826	Common Raven	2.50
9826	Western Meadowlarl	10.00
9826	Vesper Sparrow	67.50
9826	Brewer's Sparrow	60.00
9826	Cliff Swallow	2.50
9826	Sage Thrasher	. 50.00
9827	Long-billed Curlew	2.50
9827	Northern Harrier	2.50
9827	Horned Lark	97.50
9827	McCown's Longspur	7.50
9827	Vesper Sparrow	65.00
9827	Savannah Sparrow	22.50
9827	Chipping Sparrow	2.50
9827	Cliff Swallow	2.50
9828	Long-billed Curlew	. 7.50
9828	Short-eared Owl	2.50
9828	Horned Lark	100.00
9828	Common Raven	2.50
9828	McCown's Longspur	2.50
9828	Vesper Sparrow	42.50
9828	Savannah Sparrow	15.00
9828	Cliff Swallow	2.50
9829	Horned Lark	15.00
9829	Vesper Sparrow	52.50
9829	Brewer's Sparrow	82.50
9829	Sage Sparrow	5.00
9829	Cliff Swallow	2.50
9829	Sage Thrasher	67.50
9829	Rock Wren	5.00
9830 .	Willet	2.50
9830	Golden Eagle	2.50
9830	Willow Flycatcher	2.50
9830	Horned Lark	32.50
9830	Western Meadowlar	k 17.50
9830	Vesper Sparrow	42.50
9830	Brewer's Sparrow	100.00
9830	Sage Sparrow	2.50
9830	Sage Thrasher	52.50
9830	Rock Wren	7.50



Table 6. Species Abundance by Point

SPECIES ABUNDANCE BY POINT

TRANSECT	POINT		SPECIES SUM	Adjusted Mean	Standard Deviation
9801	1	Killdeer	1	0.33	0.58
9801	1	Homed Lark	6	2.00	1.73
9801	1	Brown-Headed Cowbird	11	3.67	5.51
9801	1	Western Meadowlark	4	1.33	0.58
9801	1	Vesper Sparrow	2	0.67	0.58
9801	1	Brewer's Sparrow	3	1.00	1.00
9801	1	Lark Bunting	9	3.00	1.00
9801	2	Mourning Dove	1	. 0.33	0.58
9801	2	Homed Lark	3	1.00	1.00
9801	2	Brown-Headed Cowbird	1	0.33	0.58
9801	2 .	Red-winged Blackbird	1	0.33	0.58
9801	2	Western Meadowlark	6	2.00	1.00
9801 .	2	Brewer's Blackbird	5	1.67	2.89
9801	2	Vesper Sparrow	3	1.00	1.00
9801	2	Brewer's Sparrow	2	0.67	1.15
9801	2	Lark Bunting	4	1.33	0.58
9801	2	Northern Rough-winged	1	0.33	0.58
9801	3	Homed Lark	8	2.67	0.58
	3	Western Meadowlark	3	1.00	1.00
9801	_		2	0.67	1.15
9801	3	Vesper Sparrow	2	1.00	1.00
9801	3	Brewer's Sparrow	3		1.00
9801	3	Lark Bunting	6	2.00	0.58
9801	4	Killdeer	1	0.33	
9801	4	Homed Lark	12	4.00	1.73
9801	4	Western Meadowlark	2	0.67	0.58
9801	4	Vesper Sparrow	3	1.00	0.00
9801	4	Lark Bunting	1	0.33	0.58
9801	5	Homed Lark	12	4.00	1.00
9801	5	Western Meadowlark	2	0.67	0.58
9801	5	Vesper Sparrow	1	0.33	0.58
9801	5	Lark Bunting	4	1.33	2.31
9801	6	Horned Lark	16	5.33	2.89
9801	6	Western Meadowlark	1	0.33	0.58
9801	6	Vesper Sparrow	1	0.33	0.58
9801	6	Lark Bunting	2	0.67	1.15
9801	7	Homed Lark	12	4.00	1.73
9801	7	Western Meadowlark	1	0.33	0.58
9801	7	Vesper Sparrow	3	1.00	1.73
9801	7	Lark Bunting	3	1.00	1.00
9801	8	Homed Lark	9	3.00	1.73
9801	8	Western Meadowlark	2	0.67	1_15
9801	8	Vesper Sparrow	5	1.67	1.15
9801	8	Brewer's Sparrow	2	0.67	0.58
9801	8	Lark Bunting	1	0.33	0.58
9801	9	Western Meadowlark	2	0.67	1.15
9801	9	Brewer's Blackbird	3	1.00	1.73
9801	9	Vesper Sparrow	6	2.00	1.00
9801	9	Brewer's Sparrow	1	0.33	0.58
9801	9	Lark Bunting	4	1.33	1.53
9801	10	Horned Lark	8	2.67	1.53
9801	10	Western Meadowlark	3	1.00	1.00
	10	Chestnut-collared Longsp	1	0.33	0.58
9801	10		Λ	1.33	1.53
9801		Vesper Sparrow	5	1.67	1.53
9801	10	Lark Bunting		1.07	1.00
9802	1	Horned Lark	2	0.67	0.58
9802	i	Brown-Headed Cowbird	6	2.00	2.65
9802	i	Western Meadowlark	3	1.00	1.00
9802	1	Brewer's Blackbird	1	0.33	0.58
9802	1	Vesper Sparrow	3	1.00	1.00
9802	1	Brewer's Sparrow	8	2.67	1.53
9802	2	Homed Lark	7	2.33	0.58
9802	2	Brown-Headed Cowbird	2	0.67	0.58
			1		
9802	2	Western Meadowlark	4	1.33	1.53



TRANSECT	POINT	SPECIES SI	PECIES SUM	Adjusted Mean	Standard Deviation
9802	2	Vesper Sparrow	5	1.67	1.15
9802	2	Brewer's Sparrow	9	3.00	1.73
9802	3	Horned Lark	6	2.00	0.00
9802	3	Western Meadowlark	4	1.33	1.53
9802	3	Vesper Sparrow	2	0.67	0.58
9802	3	Brewer's Sparrow	8	2.67	2 08
9802	4	Horned Lark	9	3.00	1.73
	4	Brown-Headed Cowbi		0.67	1.15
9802	4	Western Meadowlark	8	2.67	0.58
9802	· ·		4	1.33	0.58
9802	4	Vesper Sparrow	10	3.33	0.58
9802	4	Brewer's Sparrow	10	0.33	0.58
9802	4	Sage Thrasher	I		1.00
9802.	5	Homed Lark	9	3.00	
9802	5	Western Meadowlark	4	1.33	1.15
9802	5	Vesper Sparrow	6	2.00	1.73
9802	5	Brewer's Sparrow	9	3.00	1.00
9802	6	Homed Lark	10	3.33	2.52
9802	6	Western Meadowlark	3	1.00	1.00
9802	6	Brewer's Sparrow	14	4.67	1.53
9802	6	Sage Thrasher	1	0.33	0.58
. 9802	7	Homed Lark	5	1.67	1.53
9802	7	Western Meadowlark	5	1.67	0.58
9802	7	Vesper Sparrow	3	1.00	1.00
9802	7	Brewer's Sparrow	4	1.33	0.58
	,	Horned Lark	7	2.33	2 52
9802	8		,	1.67	0.58
9802	8	Western Meadowlark		2.00	2.00
9802	8	Vesper Sparrow	6		1.53
9802	8	Brewer's Sparrow	10	3.33	
9802	8	Cliff Swallow	1	0.33	0.58
9802	9	Horned Lark	2	0.67	0.58
9802	9	Brown-Headed Cowb		1.00	1.00
9802	9	Western Meadowlark	8	2.67	0.58
9802	9	Vesper Sparrow	4	1.33	0.58
9802	9	Brewer's Sparrow	5	1.67	0.58
9802	10	Mourning Dove	1	0.33	0.58
9802	10	Horned Lark	8	2.67	0.58
9802	10	Brown-Headed Cowl	oird 1	0.33	0.58
9802	10	Western Meadowlark		1.33	1.15
9802	10	Vesper Sparrow	2	0.67	1.15
9802	10	Brewer's Sparrow	7	2.33	0.58
		•	1	0.33	0.58
9802	10	Sage Thrasher			
9803	1	California Gull	1	0.25	0.50
9803	1	Western Meadowlark	8	2.00	0.82
9803	1	Vesper Sparrow	10	2.50	1.00
9803	i	Brewer's Sparrow	11	2.75	2.06
9803	i	Lark Bunting	5	1.25	0.96
	2	California Gull	1	0.25	0.50
9803	2	Ring-billed Gull	2	0.50	1.00
9803	2	Western Meadowlar	6	1.50	1.29
9803	2		12	3.00	2.00
9803	2	Vesper Sparrow		3.00	0.82
9803	2	Brewer's Sparrow	12	4.25	7.18
9803	2	Lark Bunting	17		0.50
9803	3	California Gull	1	0.25	
9803	3	Ring-billed Gull	3	0.75	1.50
9803	3	Mallard	1	0.25	0.50
9803	3	Brown-Headed Cow	bird 3	0.75	
9803	3	Western Meadowlar	k 3	0.75	
9803	3	Vesper Sparrow	10	2.50	
9803	3	Brewer's Sparrow	17	4.25	
9803	3	Lark Bunting	3	0.75	0.96
9803	1	California Gull	8	2.00	4.00
9803	4	Ring-billed Gull	2	0.50	1.00
	4	Mourning Dove	1	0.25	
9803	4	Monthing Dove	1		



TRANSECT	POINT	SPECIES SPECIE		Adjusted Mean	Standard Deviation
9803	4	Western Meadowlark	6	1.50	1.00
9803	4	Vesper Sparrow	9	2.25	2.63
9803	4	Brewer's Sparrow	10	2.50	0.58
9803	5	California Gull	2	0.50	0 58
9803	5	Western Meadowlark	2	0.50	1.00
9803	5	Vesper Sparrow	7	1.75	0.96
9803	5		11	2.75	0.50
		Brewer's Sparrow	11		
9803	6	California Gull	3	0.75	1.50
9803	6	Upland Sandpiper	1	0.25	0.50
9803	6	Homed Lark	1	0.25	0.50
9803	6	Western Meadowlark	13	3.25	0.96
9803	6	Vesper Sparrow	9	2.25	1.26
9803	6	Brewer's Sparrow	18	4.50	2.38
9803	6	Lark Bunting	3	0.75	0.96
	7		1	0.25	0.50
9803		Eastern Kingbird	1		
9803	7	Brown-Headed Cowbird	I a	0.25	0.50
9803	7	Western Meadowlark	6	1.50	0.58
9803	7	Vesper Sparrow	9	2.25	0.96
9803	7	Brewer's Sparrow	12	3.00	1.41
9803	7	Lark Bunting	1	0.25	0.50
9803	8	California Gull	6	1.50	3.00
	8	Brown-Headed Cowbird	1	1.00	1.41
9803			4		
9803	8	Western Meadowlark	6	1.50	0.58
9803	8	Vesper Sparrow	6	1.50	1.91
9803	8	Brewer's Sparrow	12	3.00	0.00
9803	8	Lark Bunting .	2	0.50	1 00
9803	9	California Gull	5	1.25	1.50
9803	9	Ring-billed Gull	1	0.25	0.50
		-	1	0.25	0.50
9803	9	Mourning Dove	1		
9803	9	Brown-Headed Cowbird	2	0.50	1.00
9803	9	Western Meadowlark	4	1.00	0.82
9803	9	Vesper Sparrow	9	2.25	2.22
9803	9	Brewer's Sparrow	18	4.50	2.52
9803	9	Lark Bunting	6	1.50	1.29
9803	10	Ring-billed Gull	1	0.25	0.50
			,	0.50	0 58
9803	10	Mourning Dove	2	0.25	0.50
9803	10	Common Nighthawk	1		
9803	10	Homed Lark	1	0.25	0.50
9803	10	Western Meadowlark	6	1.50	0.58
9803	10	Vesper Sparrow	2	0.50	0.58
9803	10	Brewer's Sparrow	16	4.00	1.41
9803	10	Lark Bunting	34	8.50	10.41
9804	1	California Gull	2	0.50	1.00
9804	i	Ring-billed Gull	1	0.25	0.50
	1		1	0.25	0.50
9804	1	American Wigeon	2		1.00
9804	1	Killdeer	2	0.50	
9804	1	Mourning Dove	3	0.75	1.50
9804	1	Brown-Headed Cowbird	13	3.25	3.86
9804	1	Western Meadowlark	10	2.50	0.58
9804	1	Brewer's Blackbird	5	1.25	1.50
9804	1	Vesper Sparrow	4	1.00	0.82
	1		2	0.75	1.50
9804	I	Savannah Sparrow	5		
9804	1	Brewer's Sparrow	5	1.25	1.50
9804	1	Lark Bunting	12	3.00	2.16
9804	1	Barn Swallow	2	0.50	1.00
9804	2	Killdeer	1	0.25	0.50
9804	2	Brown-Headed Cowbird	17	4.25	7.18
9804	2	Western Meadowlark	9	2.25	0.50
		Brewer's Blackbird	1	1.00	0.82
9804	2		4		
9804	2	Vesper Sparrow	I	0.25	0.50
9804	2	Chipping Sparrow	2	0.50	1.00
9804	2	Brewer's Sparrow	11	2.75	1.26
9804	2	Lark Bunting	10	2.50	1.29
9804	2	Northern Rough-winged	2	0.50	1.00
	3	Ring-billed Gull	1	0.25	0.50
9804	3	King-billed Guil		0.23	0.50



TRANSECT	POINT		PECIES SUM	Adjusted Mean	Standard Deviation
9804	3	Gadwall	1	0.25	0.50
9804	3	Eastern Kingbird	1	0.25	0.50
9804	3	Brown-Headed Cowbi		0.75	0.96
9804	3	Western Meadowlark	10	2.50	0.58
9804	3	Brewer's Blackbird	4	1.00	1.41
9804	3	Vesper Sparrow	1	0.25	0.50
9804	3	Brewer's Sparrow	6	1.50	0.58
9804	3	Lark Bunting	7	1.75	1.71
9804	3	Sage Thrasher	1	0.25	0.50
9804	4	California Gull	1	0.25	0.50
9804	4	Ring-billed Gull	1	0.25	0.50
9804	1	Mourning Dove	2	0.50	1.00
	4	Brown-Headed Cowb	ird 3	0.75	0.96
9804	4	Western Meadowlark	10	2.50	1.73
9804	4		10	1.00	0.82
9804	4	Brewer's Blackbird	1	0.25	0.50
9804	4	American Goldfinch	1		
9804	4	Brewer's Sparrow	5	1.25	1.26
9804	4	Lark Bunting	9	2.25	1.26
9804	5	California Gull	2	0.50	1.00
9804	5	Ring-billed Gull	2	0.50	1.00
9804	5	Golden Eagle	1	0.25	0.50
9804	5	Brown-Headed Cowb	ird 2	0.50	0.58
9804	5	Western Meadowlark		2.75	1.26
9804	5	Brewer's Blackbird	1	0.25	0.50
	5	Brewer's Sparrow	5	1.25	0.50
9804			13	3.25	2.06
9804	5	Lark Bunting	15	0.25	0.50
9804	6	Ring-billed Gull	1	0.25	0.50
9804	6	Common Snipe	l a		
9804	6	Mourning Dove	2	0.50	1.00
9804	6	Northern Harrier	1	0.25	0.50
9804	6	Brown-Headed Cowb	oird 2	0.50	0.58
9804	6	Western Meadowlark	6	1.50	0.58
9804	6	Brewer's Blackbird	2	0.50	0.58
9804	6	Vesper Sparrow	7	1.75	0.96
9804	6	Brewer's Sparrow	4	1.00	1.15
9804	6	Lark Bunting	18	4.50	2.08
	7	California Gull	2	0.50	0.58
9804		Ring-billed Gull	1	0.25	0.50
9804	7	_	1	0.50	1.00
9804	7	Killdeer	2	0.25	0.50
9804	7	Mourning Dove	ı,	0.25	0.50
9804	7	Homed Lark	I		0.58
9804	7	Western Meadowlarl	2	0.50	
9804	7	Vesper Sparrow	1	0.25	0.50
9804	7	Brewer's Sparrow	5	1.25	
9804	7	Lark Bunting	17	4.25	
9804	8	California Gull	4	1.00	
9804	8	Ring-billed Gull	1	0.25	0.50
9804	8	Killdeer	4	1.00	1.41
9804	8	Brown-Headed Cow	bird 3	0.75	0.50
	8	Western Meadowlar		1.50	
9804		Brewer's Blackbird	1	0.25	
9804	8		2	0.50	
9804	8	Vesper Sparrow	2	1.25	
9804	8	Brewer's Sparrow	3		
9804	8	Lark Bunting	11	2.75	
9804	9	California Gull	2	0.50	
9804	9	Ring-billed Gull	1	0.25	
9804	9	Marbled Godwit	1	0.25	
9804	9	Willet	2	0.50	
9804	9	Upland Sandpiper	2	0.50	0.58
		Killdeer	7	1.75	
9804	9	Homed Lark	1	0.25	
9804	9		bird 6	1.50	
9804	9	Brown-Headed Cow		0.25	
9804	9	Red-winged Blackb			
9804	9	Western Meadowlar	·k 6	1.50	
9804	9	Brewer's Blackbird	2	0.50	
9804	9	Vesper Sparrow	4	1.00	1.1:



TRANSEC	T POINT	SPECIES SPECIE	S SUM	Adjusted Mean	Standard Deviation
9804	10	Western Meadowlark .	6	1.50	
9804	10	Vesper Sparrow	4		1.29
9804	10	Brewer's Sparrow	2	1.00	0.82
9804	10	Lark Bunting	2	0.50	0.58
9804	9		11	2.75	1.26
9804		Brewer's Sparrow	1	0.25	0.50
	9	Lark Bunting	9	2.25	1.71
9804	10	Gadwall	2	0.50	1.00
9804	10	Killdeer	1	0.25	0.50
9804	10	Homed Lark	1	0.25	0.50
9805	1	Golden Eagle	1	0.25	0.50
9805	1	Red-winged Blackbird	2	0.50	0.50
9805	1	Western Meadowlark	1		1.00
9805	1	Brewer's Blackbird	2	0.25	0.50
9805	i	Pine Siskin	2	0.50	0.58
9805	1		2	0.50	1.00
9805	1	Vesper Sparrow	10	2.50	1.00
	1	Brewer's Sparrow	9	2.25	0.96
9805	1	Sage Thrasher	1	0.25	0.50
9805	2	Western Meadowlark	4	1.00	0.82
9805	2	Vesper Sparrow	7	1.75	0.96
9805	2	Brewer's Sparrow	15	3.75	1.50
9805	2	Sage Thrasher	5	1.25	
9805	3	Brewer's Blackbird	1	0.25	0.96
9805	3	American Goldfinch	1		0.50
9805	3	Vesper Sparrow	7	0.25	0.50
9805	3		/	1.75	0.96
9805		Brewer's Sparrow	7	1.75	0.50
	3	Sage Thrasher	1	0.25	0.50
9805	4	Western Meadowlark	1	0.25	0.50
9805	4	American Goldfinch	1	0.25	0.50
9805	4	Pine Siskin	2	0.50	0.58
9805	4	Vesper Sparrow	3	0.75	0.50
9805	4	Brewer's Sparrow	12	3.00	
9805	4	Sage Thrasher	1	0.25	0.82
9805	5	Brown-Headed Cowbird	,		0.50
9805	5	Western Meadowlark	2	0.50	1.00
9805	5		2	0.50	0.58
9805		American Goldfinch	l .	0.25	0.50
	5	Pine Siskin	3	0.75	0.50
9805	5	Vesper Sparrow	8	2.00	1.83
9805	5	Brewer's Sparrow	16	4.00	1.41
9805	5	Green-tailed Towhee	1	0.25	0.50
9805	5	American Robin	1	0.25	0.50
9805	6	Mallard	1	0.25	0.50
9805	6	Gadwall	2	0.50	
9805	6	American Green-winged Teal	10	2.50	1.00
9805	6	Great Blue Heron	10		3.79
9805	6	Killdeer	1	0.25	0.50
9805	6		1	0.25	0.50
9805		Eastern Kingbird	3	0.75	0.96
	6	Brown-Headed Cowbird	4	1.00	1.41
9805	6	Western Meadowlark	1	0.25	0.50
9805	6	Pine Siskin	2	0.50	1.00
9805	6	Vesper Sparrow	6	1.50	1.29
9805	6	White-crowned Sparrow	3	0.75	0.50
9805	6	Brewer's Sparrow	5	1.25	
9805	6	Song Sparrow	6		0.50
9805	6	Northern Rough-winged	•	1.50	0.58
9805	6		4	1.00	2.00
9805		Common Yellowthroat	4	1.00	0.82
	6	American Robin	3	0.75	0.96
9805	/	Western Meadowlark	1	0.25	0.50
9805	7	Vesper Sparrow	7	1.75	0.50
9805	7	Brewer's Sparrow	10	2.50	2.38
9805	7	Sage Thrasher	1	0.25	0.50
9805	8	Western Meadowlark	4	1.00	•
9805	8	Vesper Sparrow	5	1.25	0.82
9805	8	Brewer's Sparrow	12		0.50
9805	9	Western Meadowlark		3.00	0.82
9805	9	American Goldfinch	4	1.00	0.00
,003	,	American Goldinien	2	. 0.50	1.00



TRANSECT	POINT	SPECIES SPECIE	CS SUM	Adjusted Mean	Standard Deviation
9805	10	Brewer's Blackbird	1	0.25	0.50
9805	10	Vesper Sparrow	6	1.50	1.91
9805	10	Brewer's Sparrow	13	3.25	0.96
9805	10	Sage Thrasher	2	0.50	0.58
9805	9	Pine Siskin	ĩ	0.25	0.50
			12	3.25	2.22
9805	9	Vesper Sparrow	13		
9805	9	Savannah Sparrow	1	0.25	0.50
9805	9	Brewer's Sparrow	2	0.50	0.58
9805	9	Barn Swallow	1	0.25	0.50
9805	10	Western Meadowlark	5	1.25	0.50
9806	1	Golden Eagle	1	0.25	0.50
9806	1	Western Meadowlark	10	2.50	1.00
9806 .	i	Vesper Sparrow	3	0.75	0.96
9806	i	Brewer's Sparrow	10	2.50	1.73
	1	-	2	0.50	0.58
9806	l i	Spotted Towhee	2	0.25	0.50
9806	1	Rock Wren	I.		
9806	2	Golden Eagle	1	0.25	0.50
9806	2	Western Meadowlark	6	1.50	0.58
9806	2	Vesper Sparrow	8	2.00	1.63
9806	2	Brewer's Sparrow	15	3.75	1.71
	3	Western Meadowlark	1	1.00	0.82
9806	3		7	0.25	0.50
9806	3	American Goldfinch	1		
9806	3	Vesper Sparrow	5	1.25	0.96
9806	3	Brewer's Sparrow	18	4.50	1.73
9806	4	Western Meadowlark	7	1.75	1.26
9806	4	Vesper Sparrow	5	1.25	1.26
9806	Ā	Brewer's Sparrow	15	3.75	0.50
	-	Merlin	1	0 25	0.50
9806	5		7	1.75	1.50
9806	5	Western Meadowlark	/		
9806	5	Vesper Sparrow	5	1.25	0.96
9806	5	Brewer's Sparrow	18	4.50	3.00
9806	5	Sage Thrasher	1	0.25	0.50
9806	6	Western Meadowlark	4	1.00	0.82
9806		Vesper Sparrow	5	1.25	1.26
	6		19	4.75	1.50
9806	6	Brewer's Sparrow	19	0.75	0.96
9806	6	Sage Thrasher	3		
9806	7	Short-eared Owl	1	0.25	0.50
9806	7	Western Meadowlark	6	1.50	1.29
9806	7	Vesper Sparrow	2	0.50	0.58
9806	7	Brewer's Sparrow	17	4.25	0.96
	7	Sage Thrasher	1	0.25	0.50
9806			,	1.50	1.29
9806	8	Western Meadowlark	6		1.50
9806	8	Vesper Sparrow	5	1.25	
9806	8	Brewer's Sparrow	14	3.50	1.73
9806	9	Western Meadowlark	6	1.50	0.58
9806	9	Vesper Sparrow	7	1.75	1.26
9806	9	Brewer's Sparrow	12	3.00	1.83
		•	2	0.50	1.00
9806	10	Mourning Dove	10	2.50	
9806	10	Western Meadowlark	10		
9806	10	Vesper Sparrow	6	1.50	
9806	10	Brewer's Sparrow	5	1.25	
9806	10	Lark Bunting	1	0.25	0.50
9806	10	Sage Thrasher	1	0.25	0.50
9807	1	Northern Harrier	1	0.25	0.50
	1	Short-cared Owl	1	0.25	
9807	1		1.4	3.50	
9807	1	Western Meadowlark	14		
9807	1	Vesper Sparrow	3	0.75	
9807	1	Brewer's Sparrow	11	2.75	
9807	1	Lark Bunting	1	0.25	0.50
	2	Killdeer	1	0.25	
9807	2		11	2.75	
9807	2	Western Meadowlark	11		
9807	2	Vesper Sparrow	3	0.75	
		D 1 C	9	2.25	1.26
9807	2	Brewer's Sparrow	,	0.25	



TRANSECT	POINT		ECIES SUM	Adjusted Mean	Standard Deviation
9807	3	Mourning Dove	2	0.50	1.00
9807	3	Brown-Headed Cowbird		1.00	1.41
9807	3	Western Meadowlark	15	3.75	171
9807	3	Vesper Sparrow	8	2.00	0.82
9807	3	Brewer's Sparrow	7	1.75	0.50
9807	4	Western Meadowlark	12	3.00	1.41
9807	4	Vesper Sparrow	6	1.50	1.29
9807	4	Brewer's Sparrow	6	1.50	1 73
9807	5	Brown-Headed Cowbird	1	0.25	0.50
9807	5	Western Meadowlark	11	2.75	0.96
9807	5	Vesper Sparrow	3	0.75	0.96
9807	5	Brewer's Sparrow	17	4.25	0.96
9807	6	Western Meadowlark	14	3.50	2.38
9807	6	Vesper Sparrow	6	1.50	1,29
9807	6	Brewer's Sparrow	11	2.75	1.71
9807	6	Lark Bunting	1	0.25	0.50
9807	7	Horned Lark	2	0.50	0.58
		Western Meadowlark	8	2.00	0.82
9807	7		0	1.25	0.96
9807	7	Vesper Sparrow	3		
9807	7	Brewer's Sparrow	3	0.75	0.96
9807	8	Horned Lark	2	0.50	0.58
9807	8	Western Meadowlark	11	2.75	2.99
9807	8	Vesper Sparrow	5	1.25	0.50
9807	8	Brewer's Sparrow	9	2.25	0.50
9807	9	Killdeer	1	0.25	0.50
9807	9	Western Meadowlark	12	3.00	1.83
9807	9	Vesper Sparrow	5	1.25	0.96
9807	9	Brewer's Sparrow	15	3.75	0.96
9807	10	Homed Lark	1	0.25	0.50
9807	10	Western Meadowlark	14	3.50	1.29
9807	10	American Goldfinch	1	0.25	0.50
9807	10	Vesper Sparrow	4	1.00	1.15
	10		15	3.75	1.71
9807 9807	10	Brewer's Sparrow Cliff Swallow	2	0.50	1.00
0000	,	117'1 - Di dana	2	0.50	0.58
9808	1	Wilsons Phalarope	2	0.50	1.00
9808	1	American Avocet	2		
9808	1	Willet	l a	0.25	0.50
9808	1	Upland Sandpiper	3	0.75	0.96
9808	1	Northern Harrier		0.25	0.50
9808	1	Brown-Headed Cowbir		1.50	1.91
9808	1	Yellow-headed Blackb	ird 3	0.75	1.50
9808	1	Red-winged Blackbird	5	1.25	2.50
9808	1	Western Meadowlark	11	2.75	1.26
9808	1	Brewer's Blackbird	1	0.25	0.50
9808	1	Vesper Sparrow	2	0.50	1.00
9808	1	Savannah Sparrow	5	1.25	1.26
9808	1	Brewer's Sparrow	4	1.00	1.15
9808	1	Cliff Swallow	40	10.00	20.00
9808	i	Barn Swallow	1	0.25	0.50
9808	2	Cinnamon Teal	1	0.25	0.50
9808	2	Wilsons Phalarope	2	0.50	1.00
	2	Willet	1	0.25	0.50
9808	2		1	0.50	1.00
9808	2	Upland Sandpiper	2	0.25	0.50
9808	2	Short-eared Owl	1		
9808	2	Brown-Headed Cowbin	rd I	0.25	0.50
9808	2	Red-winged Blackbird	3	0.75	0.96
9808	2	Western Meadowlark	10	2.50	0.58
9808	2	Vesper Sparrow	1	0.25	0.50
9808	2	Savannah Sparrow	15	3.75	1.71
9808	2	Clay-colored Sparrow	1	0.25	0.50
9808	3	California Gull.	1	0.25	0.50
9808	3	Willet	1	0.25	0.50
9808	3	Upland Sandpiper	1	0.25	0.50
		Brown-Headed Cowbi	rd 5	1.25	0.96
9808	3	Diowil-Leagued Compi	I U		



TRANSECT			CIES SUM	Adjusted Mean	Standard Deviation
9808	3	Vesper Sparrow	6	1.50	1.91
9808	3	Savannah Sparrow	12	3.00	1.41
9808	3	Clay-colored Sparrow	2	0.50	1.00
9808	3	Brewer's Sparrow	2	0.50	1 00
9808	3	Lark Bunting	1	0.25	0.50
9808	3	Cliff Swallow	1	0.25	0.50
9808	4	California Gull	1	0.25	0.50
9808	4	Short-eared Owl	1	0.25	0.50
9808	4	Brown-Headed Cowbird	12	3.00	1,41
9808	4	Red-winged Blackbird	1	0.25	0.50
9808	4	Western Meadowlark	15	3.75	1.50
9808	4	Brewer's Blackbird	2	0.50	0.58
9808	4	Vesper Sparrow	2	0.50	0.58
	4		2	0.75	0.5
9808	4	Savannah Sparrow	3	0.75	0.5
9808	4	Grasshopper Sparrow	1		
9808	4	Brewer's Sparrow	/	1.75	1.7
9808	4	Lark Bunting	5	1.25	0.5
9808	4	Cliff Swallow	14	3.50	7.0
9808	5	Ring-billed Gull	1	0.25	0.5
9808	5	Gadwall	2	0.50	1.0
9808	5	Upland Sandpiper	2	0.50	1.0
9808	5	Northern Harrier	1	0.25	0.5
9808	5	Brown-Headed Cowbird	6	1.50	1.2
			1	0.25	0.5
9808	5	Red-winged Blackbird	10		0.5
9808	5	Western Meadowlark	10	2.50	
9808	5	Brewer's Blackbird	4	1.00	1.1
9808	5	Vesper Sparrow	2	0.50	0.5
9808	5	Savannah Sparrow	3	0.75	0.9
9808	5	Brewer's Sparrow	12	3.00	2.0
9808	5	Lark Bunting	6	1.50	0.5
9808	5	Cliff Swallow	1	0.25	0.5
9808	6	California Gull	1	0.25	0.5
9808	6	Common Raven	3	0.75	1.5
	6	Brown-Headed Cowbird	7	1.75	0.9
9808	6		1	0.25	0.5
9808	6	Red-winged Blackbird	1		0.0
9808	6	Western Meadowlark	12	3.00	
9808	6	Brewer's Blackbird	2	0.50	0.5
9808	6	Savannah Sparrow	7	1.75	0.9
9808	6	Brewer's Sparrow	4	1.00	0.0
9808	6	Lark Bunting	4	1.00	1.1
9808	6	Cliff Swallow	4	1.00	1.4
9808	7	Willet	1	0.25	0.5
9808	7	Northern Harrier	1	0.25	0.5
9808	7	Brown-Headed Cowbird	7	1.75	1.3
	7	Western Meadowlark	10	2.50	1.0
9808	· ·	Brewer's Blackbird	14	3.50	7.0
9808	7		6	1.50	1.7
9808	7	Vesper Sparrow	0		1.
9808	7	Savannah Sparrow	,	1.75	
9808	7	Brewer's Sparrow	1	0.25	0.:
9808	7	Lark Bunting	1	0.25	0.5
9808	7	Cliff Swallow	20	5.00	10.0
9808	8	Short-cared Owl	1	0,25	0
9808	8	· Common Raven	1	0.25	0
9808	8	Brown-Headed Cowbird	1 3	0.75	1.
		Red-winged Blackbird	1	0.25	0.
9808	8	Western Meadowlark	9	2.25	1.
9808	8				
9808	8	Vesper Sparrow	6	1.50	1.
9808	8	Savannah Sparrow	11	2.75	2.
9808	8	Brewer's Sparrow	2	0.50	1.
9808	8	Cliff Swallow	14	3.50	7.
9808	9	California Gull	1	0.25	
9808	9	Gadwall	4	1.00	2.
9808	9	Blue-winged Teal	10	2.50	
	9	Cinnamon Teal	10	2.50	
9808			10	0.50	
9808	9	Willet	2		1.
9808	9	Upland Sandpiper	2	0.50	



TRANSECT	POINT	SPECIES SPECIE	S SUM	Adjusted Mean	Standard Deviation
9808	9	Kılldeer	2	0.50	1.00
9808	9	Common Raven	1	0.25	0.50
9808	9	Brown-Headed Cowbird	8	2.00	2.71
9808	9	Yellow-headed Blackbird	1	0.25	0.50
9808	9	Red-winged Blackbird	2	0.50	1.00
9808	9	Western Meadowlark	9	2.25	1.50
9808	9	Vesper Sparrow	4	1.00	1.41
9808	9	Savannah Sparrow	10	2.50	1.73
9808	9	Lark Bunting	8	2.00	4.00
9808	9	Cliff Swallow	15	3.75	7.50
9808	10	California Gull	1	0.25	0.50
9808	10	Gadwall	1	0.25	0.50
9808	10	Wilsons Phalarope	2	0.50	0.58
9808	10	American Avocet	1	0.25	0.50
9808	10	Willet	2	0.50	1.00
9808	10	Upland Sandpiper	1	0.25	0.50
9808	10	Brown-Headed Cowbird	7	1.75	1.71
9808	10	Yellow-headed Blackbird	10	2.50	3.11
9808	10	Red-winged Blackbird	4	1.00	1.15
9808	10	Western Meadowlark	10	2.50	1.00
9808	10	Vesper Sparrow	2	0.50	1 00
9808	10	Savannah Sparrow	3	0.75	0.96
9808	10	Lark Bunting	2	0.50	1.00
9808	10	Cliff Swallow	10	2.50	5.00
9808	10				
9809	1	California Gull	1	0.25	0.50
9809	1	Horned Lark	3	0.75	0.96
9809	1 1	Brown-Headed Cowbird	2	0.50	0.58
9809	1	Western Meadowlark	6	1.50	1.91
9809	1	Brewer's Blackbird	7	1.75	2.87
9809	1	American Goldfineh	1	0.25	0 50
9809	1	Chestnut-collared Longspur	3	0.75	0.96
9809	i	Vesper Sparrow	2	0.50	1.00
9809	i	Brewer's Sparrow	7	1.75	1.50
9809	i	Lark Bunting	21	5.25	2.06
9809	1	Bam Swallow	4	1.00	1.41
9809	2	Willet	1	0.25	0.50
9809	2	Homed Lark	4	1.00	0.82
9809	2	Brown-Headed Cowbird	1	0.25	0.50
	2	Western Meadowlark	3	0.75	0.96
9809	~	Chestnut-collared Longspur	ĺ	0.25	0.50
9809	2		A	1.00	0.82
9809	2	Vesper Sparrow	14	3.50	3.00
9809	2	Brewer's Sparrow	23	5.75	2.99
9809	2	Lark Bunting	23	0.25	0.50
9809	3	Upland Sandpiper	10	2.50	5.00
9809	3	Brown-Headed Cowbird	10		2.71
9809	3	Western Meadowlark	8	2.00	
9809	3	Vesper Sparrow	8	2.00	
9809	3	Brewer's Sparrow	9	2.25	
9809	3	Lark Bunting	23	5.75	
9809	3	Bam Swallow	1	0.25	
9809	4	Upland Sandpiper	2	0.50	
9809	4	Horned Lark	3	0.75	
9809	4	European Starling	2	0.50	
9809	4	Brown-Headed Cowbird	12	3.00	
9809	4	Western Meadowlark	9	2.25	
9809	4	Brewer's Blackbird	1	0.25	
9809	4	Vesper Sparrow	2	0.50	0.58
9809	4	Chipping Sparrow	1	0.25	
9809	4	Brewer's Sparrow	9	2.25	
9809	4	Lark Bunting	9	2.25	
	4	Sprague's Pipit	1	0.25	
9809	4	Upland Sandpiper	,	0.50	
9809	5	Horned Lark	7	1.75	
9809	5	Hollied Lark	,		2.50



TRANSECT	POINT	SPECIES SPECIES	SUM	Adjusted Mean	Standard Deviation
9809	5	Brown-Headed Cowbird	1	0.25	0.50
9809	5	Western Meadowlark	5	1.25	1.50
9809	5	Chestnut-collared Longspur	15	3.75	1.71
9809	5	Vesper Sparrow	2	0.50	1.00
9809	5	Brewer's Sparrow	5	1.25	0.96
9809	5	Lark Bunting	14	3.50	3.00
		Ferruginous Hawk	17	0.25	0.50
9809	6		1	0.50	0.58
9809	6	Homed Lark	2	0.25	0.50
9809	6	Brown-Headed Cowbird	1	1.50	0.58
9809	6	Western Meadowlark	6		
9809	6	Chestnut-collared Longspur	21	5.25	1.26
9809	6	Vesper Sparrow	2	0.50	0.58
9809	6	Brewer's Sparrow	3	0.75	0.96
9809	6	Lark Bunting	7	1.75	0.96
9809	7	Homed Lark	5	1.25	0.50
9809	7	Brown-Headed Cowbird	2	0.50	0.58
9809 ·	7	Western Meadowlark	8	2.00	0.82
9809	7	Chestnut-collared Longspur	2	0.50	0.58
9809	7	Vesper Sparrow	2	0.50	1 00
9809	7	Brewer's Sparrow	2	0.50	0.58
9809	7	Lark Bunting	15	3.75	2.75
9809	8	Mallard	1	0.25	0.50
	8	Horned Lark	4	1.00	0.82
9809	8	Brown-Headed Cowbird	Λ	1.00	1 41
9809		Western Meadowlark	9	2.25	2.06
9809	8		1	0.25	0.50
9809	8	Chestnut-collared Longspur	1	0.75	0.96
9809	8	Vesper Sparrow	,	0.75	0.50
9809	8	Savannah Sparrow	ı		1.26
9809	8	Brewer's Sparrow	9	2.25	2.22
9809	8	Lark Bunting	17	4.25	
9809	9	Mallard	3	0.75	1.50
9809	9	Gadwall	2	0.50	1.00
9809	9	Horned Lark	4	1.00	1.41
9809	9	Brown-Headed Cowbird	1	0.25	0 50
9809	9	Red-winged Blackbird	1	0.25	0.50
9809	9	Western Meadowlark	5	1.25	0.96
9809	9	Chestnut-collared Longspur	4	1 00	1.41
9809	9	Vesper Sparrow	3	0.75	0.50
9809	9	Brewer's Sparrow	15	3.75	2.22
	9	Lark Bunting	21	5.25	1.50
9809		Killdeer	1	0.25	0.50
9809	10	Northern Harrier	1	0.25	0.50
9809	10		1	0.25	0.50
9809	10	Homed Lark	9	2.25	3.86
9809	10	Brown-Headed Cowbird	9	0.25	0.50
9809	10	Red-winged Blackbird	l c		
9809	10	Western Meadowlark	5	1.25	
9809	10	Chestnut-collared Longspur	7	1.75	
9809	10	Vesper Sparrow	3	0.75	
9809	10	Brewer's Sparrow	5	1.25	
9809	10	Lark Bunting	20	5.00	
9809	10	Barn Swallow	1	0.25	0.50
9810	1	Northern Harrier	1	0.25	
9810	1	Brown-Headed Cowbird	2	0.50	
9810	1	Brewer's Blackbird	3	0.75	1.50
9810	i	American Goldfinch	1	0.25	0.50
9810	1	Vesper Sparrow	5	1.25	0.96
	1	Savannah Sparrow	9	2.25	
9810	1	Brewer's Sparrow	10	2.50	
9810	1	Brown-Headed Cowbird	10	0.25	
9810	2		1	0.25	
9810	2	Brewer's Blackbird	1	0.75	
9810	2	Vesper Sparrow	3		
9810	2	Savannah Sparrow	4	1.00	
9810	2	Brewer's Sparrow	15	3.75	
9810	3	Vesper Sparrow	7	1.75	
		White-crowned Sparrow		0.25	0.50



TRANSECT	POINT	SPECIES SPECIA	ES SUM	Adjusted Mean	Standard Deviation
9810	3	Brewer's Sparrow	19	4.75	0.96
9810	4	Brown-Headed Cowbird	3	0.75	1.50
9810	4	Western Meadowlark	1	0.25	0.50
9810	4	Vesper Sparrow	4	1.00	1 41
9810	4	White-crowned Sparrow	1	0.25	0.50
9810	4	Brewer's Sparrow	17	4.25	1.26
9810	5	Brown-Headed Cowbird	1	0.25	0.50
9810	5	Brewer's Blackbird	i	0.25	0.50
	5		8	2.00	1.41
9810	5	Vesper Sparrow	9	2.25	0.96
9810		Brewer's Sparrow	1	0.25	0.50
9810	6	Ferruginous Hawk	10	4.50	4.20
9810	6	Black-billed Magpie	18	0.25	0.50
9810	6	American Goldfinch	1	1.00	0.82
9810	6	Vesper Sparrow	4		1.00
9810	6	White-crowned Sparrow	2	0.50	
9810	6	Brewer's Sparrow	7	1.75	1.26
9810.	7	Brown-Headed Cowbird	3	0.75	1 50
9810	7	Vesper Sparrow	4	1.00	0.82
9810	7	Brewer's Sparrow	16	4.00	0.82
9810	7	Song Sparrow	1	0.25	0.50
9810	8	Red-tailed Hawk	1	0.25	0.50
9810	8	Prairie Falcon	1	0.25	0.50
9810	8	Black-billed Magpie	1	0.25	0.50
9810	8	Brown-Headed Cowbird	3	0.75	0.96
9810	8	Vesper Sparrow	4	1.00	1.15
	8	Brewer's Sparrow	11	2.75	1.89
9810		·	1	0.25	0.50
9810	8	Song Sparrow	1	0.25	0.50
9810	8	American Robin	1	1.00	1.15
9810	9	Common Snipe	4	0.25	0.50
9810	9	Killdeer	1		
9810	9	Short-eared Owl	2	0.50	1.00
9810	9	European Starling	1	0.25	0.50
9810	9	Brown-Headed Cowbird	4	1.00	0.82
9810	9	Brewer's Blackbird	11	2.75	2.36
9810	9	Vesper Sparrow	8	2.00	0.82
9810	9	Savannah Sparrow	1	0.25	0 50
9810	9	White-crowned Sparrow	1	0.25	0.50
9810	9	Brewer's Sparrow	6	1.50	1.29
9810	9	Song Sparrow	4	1.00	0.00
9810	9	Lincoln's Sparrow	2	0.50	1.00
9810	10	Northern Harrier	1	0.25	0.50
	10	American Crow	1	0.25	0.50
9810		Brown-Headed Cowbird	7	1.75	2.06
9810	10	Brewer's Blackbird	,	0.25	0.50
9810	10		1	1.00	0.82
9810	10	Vesper Sparrow	4	1.00	
9810	10	Savannah Sparrow	4		
9810	10	Brewer's Sparrow	6	1.50	
9810	10	Barn Swallow	1	0.25	0.50
9811	1	Horned Lark	5	1.25	
9811	1	Western Meadowlark	6	1.50	
9811	1	Brewer's Blackbird	4	1.00	2.00
9811	1	Vesper Sparrow	1	0.25	0.50
9811	i	Brewer's Sparrow	3	0.75	0.50
	1	Lark Bunting	8	2.00	
9811	1	Horned Lark	, 5	1.25	
9811	2		. 5	1.50	
9811	2	Western Meadowlark	3	0.75	
9811	2	Vesper Sparrow	3	1.25	
9811	2	Brewer's Sparrow	3		
9811	3	Horned Lark	1	0.25	
9811	3	Western Meadowlark	7	1.75	
9811	3	Brewer's Blackbird	7	1.75	
9811	3	Vesper Sparrow	1	0.25	
9811	3	Brewer's Sparrow	8	2.00	
9811	4	Homed Lark	2	0.50	
7011		Western Meadowlark	8	2.00	0.82



TRANSECT	POINT	SPECIES SPECIES SUM	Adjusted Mean	Standard Deviation
9811	4	Brewer's Blackbird 2	0.50	0.58
9811	4	Brewer's Sparrow 7	1.75	0.96
9811	4	Sage Thrasher 2	0.50	0.58
9811	5	Horned Lark 5	1.25	0.50
9811	5	Western Meadowlark 4	1.00	0.82
9811	5	Brewer's Sparrow 4	1.00	0.82
9811	6	Horned Lark 3	0.75	0.96
9811	6	Western Meadowlark 8	2.00	0.00
9811	6	Brewer's Blackbird 1	0.25	0.50
9811	6	Vesper Sparrow 2	0.50	0.58
9811	6	Brewer's Sparrow 5	1.25	0.96
9811	7	Horned Lark 2	0.50	1.00
9811	7	Western Meadowlark 7	1.75	0.50
	7	Vesper Sparrow 1	0.25	0.50
9811	7	·	1.25	0.96
9811	7	Brewer's Sparrow 5	0.75	0.50
9811	7	Sage Thrasher 3	1.00	0.82
9811	8	Horned Lark 4	1.25	0.96
9811	8	Western Meadowlark 5		
9811	8	Vesper Sparrow 1	0.25	0.50
9811	8	Lark Sparrow 2	0.50	0.58
9811	8	Brewer's Sparrow 5		1.89
9811	9	Horned Lark 3	0.75	1.50
9811	9	Western Meadowlark 8	2.00	0.82
9811	9	Vesper Sparrow 2	0.50	0.58
9811	9	Lark Sparrow 1	0.25	0.50
9811	9	Brewer's Sparrow 4	1.00	0.82
9811	10	Horned Lark 2	0.50	1.00
9811	10	Western Meadowlark 7	1.75	0.50
9811	10	Brewer's Blackbird	0.25	0.50
9811	10	Vesper Sparrow	0.75	0.50
	10	Brewer's Sparrow	0.25	0.50
9811	10	Brewer's Sparrow		
9812	1	Horned Lark		1.50
9812	1	Western Meadowlark		1.00
9812	1	Brewer's Sparrow	1.75	0.50
9812	1	Sage Thrasher	0.25	0.50
9812	2	Horned Lark	0.75	1.50
9812	2	Western Meadowlark	1.00	0.00
9812	2	Brewer's Sparrow	0.25	0.50
9812	3	Horned Lark	0.75	0.96
9812	3	Western Meadowlark	0.50	0.58
9812	3	Vesper Sparrow	0.75	0.50
9812	3	Brewer's Sparrow	0.50	0.58
	3	Homed Lark	0.75	
9812	4		2.00	
9812	4	***************************************	2 0.50	
9812	4	Vesper Sparrow	0.25	
9812	4	Brewer's Sparrow		
9812	5	Horned Lark	2.00	
9812	5	Western Meadowlark	0.75	
9812	5	Vesper Sparrow	3 0.75	
9812	5	Brewer's Sparrow	1 0.25	
9812	6	Homed Lark	3 0.75	
9812	6	Western Meadowlark	1 0.25	
9812	6	Vesper Sparrow	1 0.25	
. 9812	6	Brewer's Sparrow	2 0.50	0.58
9812	6	Sage Thrasher	1 0.25	0.50
9812	7	Short-eared Owl	1 0.25	0.50
9812	7	Horned Lark	0.25	
	7	Western Meadowlark	3 0.75	
9812		McCown's Longspur	1 0.25	
9812	7	· ·	1 0.25	
9812	7	Vesper Sparrow	4 1.00	
9812	7	Brewer's Sparrow	6 1.50	
9812	8	Horned Lark		
9812	8	Western Meadowlark	2 0.50	
9812	8	Vesper Sparrow	0.25	
9812	8	Brewer's Sparrow	1 0.25	0.50



TRANSECT	POINT		ECIES SUM	Adjusted Mean	Standard Deviation
9812	8	Lark Bunting	1	0.25	0.50 0.50
9812	8	Sage Thrasher	1	0.25	
9812	9	Western Meadowlark	6	1.50	0.58
9812	9	Vesper Sparrow	1	0.25	0.50
9812	9	Brewer's Sparrow	3	0.75	0.50
9812	10	Western Meadowlark	6	1.50	0.58
9813	1	Red-headed Woodpeck	ter 1	0.25	0.50
9813	1	Western Meadowlark	6	1.50	0.58
9813	1	Vesper Sparrow	2	0.50	1.00
9813	1	Lark Sparrow	3	0.75	0.50
9813	1	Lark Bunting	11	2.75	0.50
9813	2	Mallard	2	0.50	1.00
9813	2	Western Meadowlark	16	4.00	2.94
9813	2	Grasshopper Sparrow	2	0.50	0.58
9813.	2	Lark Sparrow	3	0.75	1.50
9813	2	Brewer's Sparrow	3	0.75	1.50
9813	2	Field Sparrow	3	0.75	0.50
9813	2	Lark Bunting	13	3.25	1.50
9813	3	Red-necked Phalarope		0.25	0.50
9813	3	Western Meadowlark	. 9	2.25	0.96
9813	3	Bullock's Oriole	1	0.25	0.50
9813	3	Grasshopper Sparrow	1	0.25	0.50
9813	3	Lark Sparrow	2	0.50	0.58
9813	3	Clay-colored Sparrow	1	0.25	0.50
9813	3	Brewer's Sparrow	1	0.25	0.50
9813	3	Spotted Towhee	1	0.25	0.50
9813	3	Lark Bunting	14	3.50	2.65
9813	4	Western Meadowlark	10	2.50	1.73
9813	4	Grasshopper Sparrow	4	1.00	1.15
9813	4	Lark Sparrow	3	0.75	0.96
9813	4	Brewer's Sparrow	1	0.25	0.50
9813	4	Spotted Towhee	4	1.00	0.82
9813	4	Lark Bunting	24	6.00	3.56
9813	4	Brown Thrasher	1	0.25	0.50
9813	5	Western Meadowlark	10	2.50	1.00
9813	5	Grasshopper Sparrow	2	0.50	. 0.58
9813	5	Lark Sparrow	1	0.25	0.50
9813	5	Brewer's Sparrow	. 2	0.50	1.00
9813	5	Spotted Towhee	1	0.25	0.50
9813	5	Lark Bunting	12	3.00	2.16
9813	6	Eastern Kingbird	2	0.50	
9813	6	Brown-Headed Cowb		0.25	
9813	6	Western Meadowlark	: 12	3.00	
9813	6	Lark Sparrow	1	0.25	
9813	6	Brewer's Sparrow	1	0.25	
9813	6	Song Sparrow	1	0.25	
9813	6	Spotted Towhee	3	0.75	
9813	6	Lark Bunting	6	1.50	
9813	7	Western Meadowlark	8	2.00	
9813	7	Grasshopper Sparrov	v 4	1.00	
9813	7	Brewer's Sparrow	1	0.25	
9813	7	Field Sparrow	1	0.25	
9813	7	Spotted Towhee	5	1.25	
9813	7	Lark Bunting	12	3.00	
9813	8	Western Kingbird	2	0.50	
9813	8	Western Meadowlar	k 13	3.25	
9813	8	Grasshopper Sparrov	v 7	1.75	
9813	8	Spotted Towhee	1	0.25	
9813	8	Lark Bunting	7	1.75	
9813	8	American Robin	1	0.25	
9813	9	Red-necked Phalaro	pe 1	0.25	
9813	9	Mourning Dove	2		
9813	9	Western Meadowlar			
9813	9	Grasshopper Sparro	w 2		
9813	9	Brewer's Sparrow	2	0.50	0.58



TRANSECT	POINT	SPECIES SPEC	CIES SUM	Adjusted Mean	Standard Deviation
9813	9	Spotted Towhee	3	0.75	0.96
9813	9	Lark Bunting	5	1.25	1.50
9813	10	Western Kingbird	1	0.25	0.50
9813	10	Western Meadowlark	6	1.50	1.29
9813	10	Savannah Sparrow	1	0.25	0.50
9813	10	•	2	0.50	0.58
		Grasshopper Sparrow	1	0.25	0.50
9813	10	Lark Bunting	1	0.23	0.50
9814	1	Western Kingbird	1	0.25	0.50
9814	1	Western Meadowlark	8	2.00	0.00
9814	1	Lark Bunting	17	4.25	2.22
9814	2	Western Kingbird	1	0.25	0.50
9814	2	Western Meadowlark	8	2.00	0.82
9814	2	Grasshopper Sparrow	2	0.50	0.58
9814	2	Lark Sparrow	1	0.25	0.50
9814	2	Brewer's Sparrow	1	0.25	0.50
9814	2	Lark Bunting	13	3.25	1.89
9814	3	Western Meadowlark	8	2.00	0.00
9814	3	Grasshopper Sparrow	4	1.00	1.15
9814	3	Lark Bunting	19	4.75	2.50
9814	1	Western Meadowlark	2	0.50	0.58
9814	A	Grasshopper Sparrow	3	0.75	0.96
9814	4	Lark Bunting	12	3.00	0.82
	4	-	1	0.25	0.50
9814	5	Upland Sandpiper	1	1.00	1.15
9814	5	Mourning Dove	4	0.50	1.00
9814	5	Eastern Kingbird	2		
9814	5	Western Kingbird	Į.	0.25	0.50
9814	5	Western Meadowlark	11	2.75	1.26
9814	5	Spotted Towhee	2	0.50	0.58
9814	5	Lark Bunting	14	3.50	1.29
9814	5	American Robin	7	1.75	0.50
9814	6	Western Meadowlark	11	2.75	0.96
9814	6	Vesper Sparrow	1	0.25	0.50
9814	6	Grasshopper Sparrow	2	0.50	0.58
9814	6	Lark Bunting	16	4.00	1.83
9814	7	Red-headed Woodpecker	1	0.25	0.50
9814	7	Western Meadowlark	5	1.25	0.50
9814	7	Lark Bunting	7	1.75	1.26
9814	8	Western Meadowlark	4	1.00	0.82
9814	8	Lark Bunting	12	3.00	0.82
9814	8	Sprague's Pipit	1	0.25	0.50
		Western Meadowlark	5	1.25	1.89
9814	9		3	0.75	0.50
9814	9	Grasshopper Sparrow	9	2.25	1.26
9814	9	Lark Bunting	9		0.50
9814	9	Sprague's Pipit	1	0.25	1.29
9814	10	Western Meadowlark	6	1.50	
9814	10	Grasshopper Sparrow	l .	0.25	0.50
9814	10	Field Sparrow	2	0.50	
9814	10	Spotted Towhee	2	0.50	
9814	10	Lark Bunting	19	4.75	1.89
9815	1	Western Meadowlark	9	2.25	0.50
9815	i	Vesper Sparrow	1	0.25	
9815	1	Brewer's Sparrow	2	. 0.50	
	1	Lark Bunting	6	1.50	
9815	1	Western Meadowlark	7	1.75	
9815	2		1	0.25	
9815	2	Brewer's Sparrow	- 1	1.00	
9815	2	Lark Bunting			
9815	3	Western Meadowlark	10	2.50	
9815	3	Grasshopper Sparrow		0.25	
9815	3	Lark Bunting	2	0.50	
9815	4	Western Meadowlark	15	3.75	
9815	4	Vesper Sparrow	1	0.25	
9815	4	Brewer's Sparrow	3	0.75	
9815	4	Lark Bunting	7	1.75	
	5	Western Meadowlark	17	4.25	1.71



TRANSECT			ES SUM	Adjusted Mean	Standard Deviation
9815	5	Grasshopper Sparrow	3	0.75	0.96
9815	5	Lark Sparrow	1	0.25	0.50
9815	5	Brewer's Sparrow	6	1.50	1.00
9815	5	Lark Bunting	9	2.25	0.96
9815	6	Western Meadowlark	11	2.75	0.96
9815	6	Grasshopper Sparrow	1	0.25	0.50
9815	6	Lark Sparrow	2	0.50	0.58
9815	6	Brewer's Sparrow	6	1.50	1.00
9815	6	Lark Bunting	10	2.50	1.29
9815	7	Western Meadowlark	11	2.75	1.50
9815	7	Brewer's Sparrow	6	1.50	0.58
9815	7	Lark Bunting	13	3.25	1.26
9815	8	Western Meadowlark	7	1.75	0.50
9815	8	Brewer's Blackbird	1	0.25	0.50
9815	8	Grasshopper Sparrow	3	0.75	0.50
	8		3	0.75	0.96
9815		Brewer's Sparrow	2	0.50	0.58
9815	8	Lark Bunting	_	2.75	1.71
9815	9	Western Meadowlark	11		
9815	9	Vesper Sparrow	l .	0.25	0.50
9815	9	Grasshopper Sparrow	5	1.25	0.50
9815	9	Brewer's Sparrow	1	0.25	0.50
9815	9	Lark Bunting	4	1.00	2.00
9815	10	Homed Lark	3	0.75	0.96
9815	10	Western Meadowlark	4	1.00	0.82
9815	10	Vesper Sparrow	4	1.00	0.82
9815	10	Grasshopper Sparrow	1	0.25	0.50
9816	1	Homed Lark	1	0.25	0.50
9816	1	Western Meadowlark	7	1.75	0.50
9816	1	Vesper Sparrow	3	0.75	0.96
9816	i	Grasshopper Sparrow	1	0.25	0.50
9816	i	Brewer's Sparrow	1	0.25	0.50
9816	i	Lark Bunting	8	2.00	1.15
9816	2	Horned Lark	1	0.25	0.50
9816	2	Western Meadowlark	10	2.50	0.58
		Grasshopper Sparrow	2	0.50	0.58
9816	2		2	0.75	1.50
9816	2	Brewer's Sparrow	6	1.50	1.91
9816	2	Lark Bunting	1	0.25	0.50
9816	3	Horned Lark	1		0.82
9816	3	Western Meadowlark	12	3.00	
9816	3	Vesper Sparrow	ı	0.25	0.50
9816	3	Grasshopper Sparrow	3	0.75	0.50
9816	3	Brewer's Sparrow	2	0.50	0.58
9816	3	Lark Bunting	10	2.50	1.00
9816	4	Homed Lark	1	0.25	0.50
9816	4	Western Meadowlark	11	2.75	0.50
9816	4	Grasshopper Sparrow	2	0.50	0.58
9816	4	Brewer's Sparrow	3	0.75	0.96
9816	4	Lark Bunting	8	2.00	1.15
9816	5	Western Mcadowlark	10	2.50	0.58
9816	5	Vesper Sparrow	1	0.25	0.50
9816	5	Grasshopper Sparrow	1	0.25	0.50
	5		2	0.50	1.00
9816		Brewer's Sparrow	10	2.50	1.00
9816	5	Lark Bunting		2.25	1.50
9816	6	Western Meadowlark	9		
9816	6	Grasshopper Sparrow	2	0.50	0.58
9816	6	Brewer's Sparrow	2	0.50	1.00
9816	6	Lark Bunting	10	2.50	1.00
9816	7	Western Meadowlark	11	2.75	
9816	7	Vesper Sparrow	1	0.25	0.50
9816	7	Grasshopper Sparrow	5	1.25	
9816	7	Lark Sparrow	1	0.25	0.50
9816	7	Brewer's Sparrow	3	0.75	0.96
9816	7	Lark Bunting	9	2.25	
9816	8	Western Meadowlark	11	2.75	
	0	TT GOLGILL ATLONGED TT SELLIC		0.25	



TRANSECT	POINT		SPECIES SUM	Adjusted Mean	Standard Deviation
9816	8	Lark Bunting	7	1.75	0.96
9816	9	Western Meadowlar	rk 9	2.25	1.26
9816	9	Field Sparrow	3	0.75	0 50
9816	9	Lark Bunting	7	1.75	0.50
9816	10	Upland Sandpiper	i	0.25	0.50
			1	0.25	0.50
9816	10	Mourning Dove	1		
9816	10	Horned Lark	1	0.25	0.50
9816	10	Western Meadowlas	rk 11	2.75	1.50
9816	10	Lark Sparrow	1	0.25	0 50
9816	10	Brewer's Sparrow	1	0.25	0.50
9816	10	Field Sparrow	3	0.75	0.96
9816	10	Lark Bunting	6	1.50	1.00
	10		1	0.25	0.50
9816	10	Loggerhead Shrike			
9817	1	Western Meadowla	rk 7	1.75	0.50
9817 .	1	Vesper Sparrow	2	0.50	1.00
9817	1	Grasshopper Sparro	w 2	0.50	0.58
9817	1	Brewer's Sparrow	4	1.00	0.82
9817	,	Western Meadowla	rk 11	2.75	0.96
	2		1	0.25	0.50
9817	2	Brewer's Blackbird	1		
9817	2	Vesper Sparrow	3	0.75	0.96
9817	2	Brewer's Sparrow	5	1.25	0.50
9817	3	Western Meadowla	rk 10	2.50	0 58
9817	3	Vesper Sparrow	8	2.00	1 63
9817	4	Western Meadowla	rk 10	2.50	1.29
9817	4	Vesper Sparrow	4	1.00	0.82
	4		·	0 25	0.50
9817	4	Grasshopper Sparro			
9817	4	Brewer's Sparrow	6	1.50	1.29
9817	5	Red-winged Blackb	pird 8	2.00	2.00
9817	5	Western Meadowla	rk 10	2.50	0.58
9817	5	Vesper Sparrow	2	0.50	0.58
9817	5	Grasshopper Sparro)w 2	0.50	0 58
	5		1	0.25	0.50
9817		Brewer's Sparrow	-1. 15	3.75	1 89
9817	6	Western Meadowla	rk 15		
9817	6	Vesper Sparrow	1	0.25	0 50
9817	6	Grasshopper Sparro		0.25	0 50
9817	7	Western Meadowla	rk 13	3.25	1.71
9817	7	Vesper Sparrow	2	0.50	0.58
9817	7	Brewer's Sparrow	.6	1.50	0.58
9817	8	Western Meadowla	rk 15	3.75	0 96
			4	1.00	0.82
9817	8	Vesper Sparrow	4		
9817	8	Grasshopper Sparro	DW I	0.25	0.50
9817	8	Brewer's Sparrow	2	0.50	0.58
9817	9	Western Meadowla	irk 12	3.00	0.82
9817	9	Vesper Sparrow	5	1.25	0.50
9817	9	Grasshopper Sparre	ow 1	0.25	0.50
	9	Brewer's Sparrow	3	0.75	0.96
9817		-	1	0.25	0.50
9817	10	Northern Harrier			
9817	10	Western Meadowla		3.50	1.00
9817	10	Vesper Sparrow	3	0.75	0.96
9817	10	Brewer's Sparrow	2	0.50	0.58
9817	10	Sage Thrasher	1	0.25	0.50
0010	1	Western Meadowla	ark 6	1.50	1.29
9818	I			1.50	0.58
9818	1	Vesper Sparrow	6		
9818	1	Grasshopper Sparr	ow 1	0.25	0.50
9818	1	Brewer's Sparrow	2	0.50	1.00
9818	2	Western Meadowl	ark 10	2.50	0.58
9818	2	Vesper Sparrow	3	0.75	0.50
	2	Brewer's Sparrow	1	0.25	0.50
9818	2		1	0.25	0.50
9818	2	Lark Bunting	1		
9818	3	Northern Harrier	1	0.25	0.50
9818	3	Western Meadowl	ark 5	1.25	1.50
9818	3	Vesper Sparrow	5	1.25	0.96
9818	3	Grasshopper Sparr	ow 2	0.50	0.58
	3	Mountain Bluebiro		0.25	0.50
9818	3	Modified Directif	,	5.23	2.33



TRANSECT	POINT	SPECIES SPEC	IES SUM	Adjusted Mean	Standard Deviation
9818	4	Western Meadowlark	9	2.25	0.96
9818	4	Vesper Sparrow	6	1.50	1.00
9818	4	Grasshopper Sparrow	1	0.25	0.50
9818	4	American Robin	1	0.25	0.50
9818	5	Western Meadowlark	10	2.50	1.00
9818	5	· Brewer's Blackbird	2	0.50	1.00
9818	5	Vesper Sparrow	3	0.75	0.96
9818	5	Grasshopper Sparrow	2	0.50	0.58
9818	5	Spotted Towhee	1	0.25	0.50
9818	6	Western Meadowlark	9	2.25	2.06
9818	6	Vesper Sparrow	5	1.25	1.50
9818	7	Western Meadowlark	9	2.25	1.71
9818	7	Vesper Sparrow	5	1.25	1.26
9818	7	Grasshopper Sparrow	2	0.50	0.58
9818	8	Western Meadowlark	8	2.00	1.83
9818	8	Vesper Sparrow	4	1.00	0.82
9818	9	Western Meadowlark	5	1.25	0.96
9818	9	Vesper Sparrow	5	1.25	0.50
9818	10	Western Meadowlark	5	1.25	0.96
	10		5	1.25	0.96
9818	10	Vesper Sparrow		1.25	0.70
9819	1	Western Meadowlark	9	2.25	1.26
9819	1	Vesper Sparrow	2	0.50	0.58
9819	1	Lark Sparrow	2	0.50	0.58
9819	1	Brewer's Sparrow	2	0.50	0.58
9819	1	Lark Bunting	7	1.75	3.50
9819	2	Western Meadowlark	8	2.00	0.82
9819	2	Vesper Sparrow	5	1.25	0.96
9819	2	Grasshopper Sparrow	1	0.25	0.50
9819	2	Lark Sparrow	3	0.75	0.96
9819	2	Brewer's Sparrow	1	0.25	0.50
9819	2	Lark Bunting	3	0.75	1.50
9819	3	Western Meadowlark	7	1.75	0.96
9819	3	Vesper Sparrow	3	0.75	0.96
9819	3	Lark Sparrow	7	1.75	0.96
9819	3	Brewer's Sparrow	1	0.25	0.50
		Lark Bunting	.1	1.00	2.00
9819	3	Western Meadowlark	4	1.50	0.58
9819	4		6	1.50	1.29
9819	4	Vesper Sparrow	0	1.00	1.41
9819	4	Lark Sparrow	4		
9819	4	Brewer's Sparrow	2	0.50	0.58
9819	4	Lark Bunting	11	2.75	3.77
9819	5	Western Meadowlark	5	1.25	0.50
.9819	5	Vesper Sparrow	3	0.75	0.50
9819	5	Lark Sparrow	4	1.00	0.82
9819	5	Brewer's Sparrow	6	1.50	1.29
9819	5	Lark Bunting	8	2.00	1.41
9819	6	Western Meadowlark	5	1.25	0.96
9819	6	Vesper Sparrow	4	1.00	0.82
9819	6	Lark Sparrow	1	0.25	0.50
9819	6	Brewer's Sparrow	3	0.75	1.50
9819	6	Spotted Towhee	2	0.50	1.00
9819	6	Lark Bunting	10	2.50	1.29
9819	7	Western Meadowlark	3	0.75	0.96
	7		5	1.25	0.96
9819		Lark Sparrow	6	1.50	2.38
9819	7	Brewer's Sparrow	1	0.25	0.50
9819	7	Spotted Towhee	1		
9819	7	Mountain Bluebird	l a	0.25	0.50
9819	8	Western Meadowlark	7	1.75	0.96
9819	8	Vesper Sparrow	7	1.75	0.50
9819	8	Lark Sparrow	1	0.25	0.50
9819	8	Brewer's Sparrow	4	1.00	0.82
9819	9	Western Meadowlark	8	2.00	0.82
9819	9	Vesper Sparrow	6	1.50	1.00



TRANSECT	POINT	SPECIES SE	PECIES SUM	Adjusted Mean	Standard Deviation
9819	9	Grasshopper Sparrow	1	0.25	0 50
9819	9	Brewer's Sparrow	3	0.75	0.96
9819	9	Sage Thrasher	1	0.25	0.50
9819	10	Upland Sandpiper	1	0.25	0.50
9819	10	Western Meadowlark	4	1.00	0.00
9819	10	Vesper Sparrow	1	0.25	0.50
9819	10	Lark Sparrow	2	0.50	1.00
9819	10	Brewer's Sparrow	4	1.00	1.15
7817	10	Blewel's Spation	7	1.00	
9820	1	Western Meadowlark	3	0.75	0.50
9820	1	Vesper Sparrow	4	1.00	1.15
9820	1	Brewer's Sparrow	2	0.50	0.58
9820	1	Lark Bunting	3	0.75	0.50
9820	2	Western Meadowlark	5	1.25	0.50
9820	2	Bullock's Oriole	1	0.25	0.50
9820	2	Vesper Sparrow	4	1.00	1.41
9820	2	Lark Sparrow	3	0.75	0.96
9820	2	Field Sparrow	2	0.50	0.58
9820	2	Lark Bunting	5	1.25	0.96
9820	3	Eastern Kingbird	1	0.25	0.50
9820	3.	Say's Phoebe	3	0.75	0.50
		Western Meadowlark	5	1.50	1.00
9820	3		1	0.25	0.50
9820	3	American Goldfinch	1		0.50
9820	3	Vesper Sparrow	1	0.25	
9820	3	Lark Sparrow	1	0.25	0.50
9820	3	Brewer's Sparrow	2	0.50	0.58
9820	3	Bank Swallow	1	0.25	0.50
9820	4	Western Meadowlark	4	1.00	0.82
9820	4	Vesper Sparrow	5	1.25	0.96
9820	4	Lark Sparrow	5	1.25	0.96
9820	4	Brewer's Sparrow	3	0.75	0.96
9820	4	Lark Bunting	10	2.50	1.00
	·	Western Meadowlark	6	1.50	0.58
9820	5		1	0.25	0.50
9820	5	Vesper Sparrow	L 4	1.00	0.82
9820	5	Lark Sparrow	4		0.50
9820	5	Spotted Towhee	1	0.25	
9820	5	Lark Bunting	7	1.75	1.26
9820	5	Cliff Swallow	2	0.50	1.00
9820	5	American Robin	1	0.25	0.50
9820	6	Western Meadowlark	7	1.75	0.96
9820	6	Vesper Sparrow	5	1.25	1.26
9820	6	Lark Sparrow	5	1.25	0.96
9820	6	Lark Bunting	16	4.00	2.94
9820	7	Western Meadowlark		0.75	0.96
9820	7	Brewer's Blackbird	2	0.50	
			<u> </u>	1.00	
9820	7	Vesper Sparrow	7	0.50	
9820	7	Lark Sparrow	2		
9820	7	Brewer's Sparrow	1	0.25	
9820	7	Lark Bunting	17	4.25	
9820	8	Western Meadowlark	4	1.00	
9820	8	Vesper Sparrow	3	0.75	
9820	8	Lark Sparrow	2	0.50	
9820	8	Field Sparrow	1	0.25	0.50
9820	8	Lark Bunting	7	1.75	1.50
9820	9	Western Meadowlark	. 5	1.25	0.50
9820	9	Vesper Sparrow	1	0.25	
			2	0.50	
9820	9	Lark Sparrow	2	0.25	
9820	9	Chipping Sparrow		0.25	
9820	9	Field Sparrow	1		
9820	9	Lark Bunting	4	1.00	
9820	10	Mourning Dove	3	0.75	
9820	10	Western Meadowlark	3	0.75	
9820	10	Vesper Sparrow	3	0.75	
9820	10	Lark Sparrow	1	0.25	
9820	10	Lark Bunting	10	2.50	1.91



TRANSECT	POINT		ES SUM	Adjusted Mean	Standard Deviation
9821	1	Western Meadowlark	5	1.25	0.50
9821	1	Vesper Sparrow	6	1.50	1.29
9821	1	Brewer's Sparrow	5	1.25	1.26
9821	2	Western Meadowlark	4	1.00	0.82
9821	2	Vesper Sparrow	3	0.75	0.96
9821	2	Brewer's Sparrow	5	1.25	0.50
9821	2	Sage Thrasher	1	0.25	0.50
	2		1		0.50
9821	3	Western Meadowlark	3	0.75	
9821	3	Vesper Sparrow	2	0.50	0.58
9821	3	Brewer's Sparrow	11	2.75	1.71
9821	3	Sage Thrasher	3	0.75	0.96
9821	4	Western Meadowlark	2	0.50	0.58
9821	4	Vesper Sparrow	7	1.75	1.71
9821	4	Brewer's Sparrow	3	0.75	0.50
9821	4	Sage Thrasher	3	0.75	0.50
9821	5	Vesper Sparrow	7	1.75	0.50
9821	5	Brewer's Sparrow	1	1.00	0.82
			1	0.25	0.50
9821	5	Sage Thrasher	1		
9821	6	Western Meadowlark	1	0.25	0.50
9821	6	Vesper Sparrow	3	0.75	0.96
9821	6	Brewer's Sparrow	5	1.25	0.50
9821	6	Sage Thrasher	2	0.50	0.58
9821	7	Vesper Sparrow	7	1.75	1.26
9821	7	Brewer's Sparrow	6	1.50	1.00
9821	7	Sage Thrasher	1	0.25	0.50
9821	7	Rock Wren	i	0.25	0.50
9821	8	Vesper Sparrow	.1	1.00	0.82
			9	2.25	1.89
9821	8	Brewer's Sparrow	9		
9821	8	Sage Thrasher	2	0.50	0.58
9821	9	Rufous Hummingbird	1	0.25	0.50
9821	9	Western Meadowlark	2	0.50	0.58
9821	9	Vesper Sparrow	8	2.00	0.82
9821	9	Brewer's Sparrow	3	0.75	0.96
9821	9	Sage Thrasher	2	0.50	0.58
9821	9	Rock Wren	1	0.25	0.50
9821	10	Western Meadowlark	1	0.25	0.50
9821	10		5	1.25	0.50
		Vesper Sparrow	5	1.25	0.50
9821	10	Brewer's Sparrow	3		
9821	10	Rock Wren	1	0.25	0.50
9822	1	Vesper Sparrow	3	0.75	0.96
9822	1	Brewer's Sparrow	5	1.25	1.50
9822	1	Sage Thrasher	1	0.25	0.50
9822	,	Rufous Hummingbird	2	0.50	1.00
9822	2	Vesper Sparrow	8	2.00	1.83
	2		3	0.75	0.50
9822	2	Brewer's Sparrow	,		
9822	2	Sage Thrasher	1	0.25	0.50
9822	3	Western Meadowlark	1	0.25	0.50
9822	3	Vesper Sparrow	5	1.25	1.26
9822	3	Brewer's Sparrow	3	0.75	0.50
9822	3	Sage Thrasher	1	0.25	0.50
9822	3	Rock Wren	1	0.25	0.50
9822	Δ	Black-billed Magpie	1	0.25	0.50
9822	4	Vesper Sparrow	5	1.25	1.89
	4		1	1.00	1.15
9822	4	Brewer's Sparrow	4		
9822	4	Sage Thrasher	1	0.25	0.50
9822	4	Rock Wren	1	0.25	0.50
9822	4	Mountain Bluebird	1	0.25	0.50
9822	5	Rufous Hummingbird	1	0.25	0.50
9822	5	Vesper Sparrow	2	0.50	0.58
9822	5	Brewer's Sparrow	3	0.75	0.96
9822	5	Rock Wren	1	0.25	0.50
9822	6	Rufous Hummingbird	1	0.25	0.50
		Western Meadowlark	1	0.25	0.50
9822	6		2	0.75	0.96
9822	6	Vesper Sparrow	3		0.96
9822	6	Brewer's Sparrow	5	1.25	0.90



TRANSECT	POINT		SPECIES SUM	Adjusted Mean	Standard Deviation
9822	6	Sage Thrasher	2	0.50	1.00
9822	6	Rock Wren	2	0.50	0.58
9822	7	Rufous Hummingbi	rd 1	0.25	0.50
9822	7	Vesper Sparrow	2	0.50	0.58
9822	7	Brewer's Sparrow	10	2.50	2.38
9822	7	Sage Thrasher	1	0.25	0.50
9822	8	Rufous Hummingbi	rd 1	0.25	0.50
9822	8	Black-billed Magpi	e 1	0.25	0.50
9822	8	Common Raven	1	0.25	0.50
9822	8	Vesper Sparrow	3	0.75	0.50
9822	8	Brewer's Sparrow	5	1.25	0.96
9822	S	Cliff Swallow	1	0.25	0.50
9822	8	Sage Thrasher	2	0.50	0.58
9822	9	Vesper Sparrow	4	1.00	0.82
9822	9	Brewer's Sparrow	5	1.25	0.50
	9	Sage Sparrow	1	0.25	0.50
9822	9	Sage Thrasher	1	0.25	0.50
9822		Western Meadowla	rk 1	0.25	0.50
9822	10		3	0.75	0.50
9822	10	Vesper Sparrow	5	1.25	0.96
9822	10	Brewer's Sparrow	1	0.25	0.50
9822	10	Sage Thrasher	1	0.25	0.50
9822	10	Rock Wren	,		
9823	1	Homed Lark	7	1.75	2.06
.9823	1	Western Meadowla	irk 1	0.25	0.50
9823	1	Vesper Sparrow	7	1.75	0.50
9823	i	Brewer's Sparrow	3	0.75	0.96
9823	1	Sage Thrasher	1	0.25	0.50
9823	2	Homed Lark	8	2.00	1.83
	-	Vesper Sparrow	2	0.50	. 0.58
9823	-	Brewer's Sparrow	5	1.25	0.96
9823	-	Sage Thrasher	2	0.50	0.58
9823	-	Horned Lark	7	1.75	1.71
9823	2		3	0.75	0.96
9823	3	Vesper Sparrow	7	1.75	0.50
9823	3	Brewer's Sparrow	1	0.25	0 50
9823	3	Sage Thrasher	8	2.00	1.83
9823	4	Horned Lark		1.25	
9823	4	Vesper Sparrow	5	1.25	1.50
9823	4	Brewer's Sparrow	3	0.25	0.50
9823	4	Sage Thrasher	1		0.96
9823	5	Vesper Sparrow	3	0.75	
9823	5	Brewer's Sparrow		3.00	
9823	5	Sage Thrasher	3	0.75	
9823	6	Horned Lark	2	0.50	
9823	6	Vesper Sparrow	4	1.00	
9823	6	Brewer's Sparrow	8	2.00	
9823	6	Sage Thrasher	1	0.25	
9823	7	Horned Lark	1	0.25	
9823	7	Vesper Sparrow	3	0.75	
9823	7	Brewer's Sparrow	10	2.50	
9823	7	Sage Thrasher	3	0.75	
9823	8	Vesper Sparrow	8	2.00	
9823	8	Brewer's Sparrow	5	1.25	
	8	Sage Thrasher	2	0.50	0.58
9823	9	Homed Lark	9	2.25	
9823		Vesper Sparrow	1	0.25	
9823	9	•	, 5	1.25	
9823	9	Brewer's Sparrow	3	0.75	
9823	9	Sage Thrasher	1	0.25	
9823	10	Horned Lark		0.25	
9823	10	Brewer's Blackbi	ra I	1.75	
9823	10	Vesper Sparrow	1	0.7:	
9823	10	Brewer's Sparrow	3	1.7:	
9823	10	Sage Thrasher	7	1.7:	1.71



TRANSECT	POINT	SPECIES	SPECIES SUM	Adjusted Mean	Standard Deviation
9824	1	Homed Lark	4	1 00	0.82
9824	i	Western Meadowl	ark l	0.25	0.50
9824	i	Vesper Sparrow	8	2.00	0.82
9824	1	Brewer's Sparrow	2	0.50	0.58
9824	2	Horned Lark	4	1.00	0.82
9824	2	Western Meadowl	ark l	0.25	0.50
	2	Vesper Sparrow	4	1.00	0.82
9824			8	2.00	0.82
9824	2	Brewer's Sparrow	2	0.75	0.50
9824	2	Sage Thrasher		1.00	0.82
9824	3	Horned Lark	1. 1. 1	0.25	0.50
9824	3	Western Meadow	lark	0.50	1.00
9824	3	Vesper Sparrow	7	1.50	0.58
9824	3	Brewer's Sparrow	6	0.25	0.50
9824	3	Cliff Swallow	1	0.25	0.50
9824	3	Sage Thrasher	1		0.58
9824	4	Homed Lark	2	0.50	
9824	4	Western Meadow	lark l	0.25	0.50
9824	4	Vesper Sparrow	4	1.00	0.82
9824	4	Brewer's Sparrow	4	1.00	0.82
9824	4	Sage Thrasher	3	0.75	0.96
9824	5	Horned Lark	3	0.75	0.50
9824	5	Vesper Sparrow	2	0.50	1.00
9824	5	Brewer's Sparrow	. 8	2.00	0.82
9824	5	Sage Thrasher	8	2.00	1.63
	6	Homed Lark	2	0.50	1.00
9824		Western Meadow	lark 2	0.50	0.58
9824	6		7	1.75	1.71
9824	6	Vesper Sparrow		0.75	0.50
9824	6	Brewer's Sparrov	; 1	0.25	0.50
9824	6	Sage Thrasher	1	0.25	0.50
9824	7	Willow Flycatche	er !	0.25	0.50
9824	7	Homed Lark	1		0.96
9824	7	Western Meadov		0.75	0.96
9824	7	Vesper Sparrow	3	0.75	
9824	7	Brewer's Sparrov	y 3	0.75	0.96
9824	7	Sage Thrasher	5	1.25	0.96
9824	7	American Robin	1	0.25	0.50
9824	8	Willow Flycatch	ct l	0.25	0.50
9824	8	Horned Lark	1	0.25	
9824	8	Western Meadov	vlark l	0.25	
9824	8	Vesper Sparrow	4	1.00	
	8	Brewer's Sparrov	v 4	1.00	0.00
9824		Sage Thrasher	3	0.75	0.50
9824	8	Western Meado	wheels 2	0.50	
9824	9		6	1.50	
9824	9	Vesper Sparrow		1.50	
9824	9	Brewer's Sparro	w	0.50	
9824	9	Sage Thrasher	2	0.25	
9824	10	Rufous Hummir	igbird		
9824	10	Homed Lark	l .	0.25	
9824	10	Vesper Sparrow	5	1.25	
9824	10	Brewer's Sparro	w 3	0.75	
9824	10	Sage Thrasher	6	1.50	1.29
9825	1	Horned Lark	2	0.50	
9825	1	Vesper Sparrow	, 5	1.25	
9825	1	Brewer's Sparro		0.50	
9825	1	Sage Thrasher	1	0.23	
	,	Horned Lark	2	0.50	0.58
9825	2	Western Meado	wlark 1	0.25	
9825	2	Vesper Sparrov		1 5/	
9825	2			0.7:	
9825	2	Brewer's Sparro		0.7:	
9825	3	Vesper Sparrov		0.2:	
9825	3	Brewer's Sparro)W I	0.7.	
9825	3	Sage Thrasher	3	0.7.	
9825	4	Homed Lark	3		
9825	4	Vesper Sparrov			
9825	4	Brewer's Sparro	ow 3	0.7	1.30



RANSECT			ECIES SUM	Adjusted Mean	Standard Deviatio
9825	4	Sage Thrasher	3	0.75	0.5
9825	5	Homed Lark	7	1.75	0.5
9825	5	Vesper Sparrow	7	1.75	0.9
9825	5	Brewer's Sparrow	1	0.25	0.5
9825	6	Horned Lark	10	2.50	1.3
9825	6	Vesper Sparrow	1	0.25	0.5
9825	7	Horned Lark	5	1.25	1.2
9825	7	Vesper Sparrow	2	0.50	0.5
9825	7	Sage Thrasher	2	0.50	1.0
9825	8	Western Meadowlark	1	0.25	0
9825	8	Vesper Sparrow	2	0.50	1.
9825	8		2		0.
		Brewer's Sparrow	3	1.25	
9825	8	Sage Thrasher	3	0.75	0.
9825	9	Vesper Sparrow	3	0.75	1.
9825 .	9	Brewer's Sparrow	- 8	2.00	1.
9825	9	Sage Thrasher	. 1	0.25	0.
9825	10	Horned Lark	5	1.25	1.
9825	10	Vesper Sparrow	5	1.25	1.
9825	10	Brewer's Sparrow	3	0.75	0.
9825	10	Sage Thrasher	2	0.50	0.
9826	1	Northern Harrier	1	0.25	0.
9826	1	Homed Lark	3	0.75	0.
9826	1	Western Meadowlark	1	0.25	0
9826	1	Vesper Sparrow	12	3.00	2
9826	1	Brewer's Sparrow	1	0.25	0
9826	1	Sage Thrasher	2	0.75	0
9826	1	Horned Lark	3	1.00	0
	2		→		
9826	2	Western Meadowlark	Ţ	0.25	0
9826	2	Vesper Sparrow	7	1.75	2
9826	2	Brewer's Sparrow	6	1.50	0
9826	2	Sage Thrasher	4	1.00	0
9826	3	Horned Lark	6	1.50	0
9826	3	Western Meadowlark	1	0.25	0
9826	3	Vesper Sparrow	5	1.25	0
9826	3	Brewer's Sparrow	4	1.00	0
9826	3	Sage Thrasher	2	0.50	0
9826	4	Horned Lark	4	1.00	0
9826	4	Western Meadowlark	1	0.25	0
9826	.1	Vesper Sparrow	.1	1.00	0
	4		1.1	2.75	1
9826	4	Brewer's Sparrow	11		
9826	4	Sage Thrasher	2	0.50	0
9826	5	Horned Lark	2	0.50	1
9826	5	Vesper Sparrow	2	0.50	0
9826	5	Brewer's Sparrow	7	1.75	0
9826	5	Sage Thrasher	4	1.00	0
9826	6	Horned Lark	5	1.25	0
9826	6	Vesper Sparrow	8	2.00	2
9826 .	6	Brewer's Sparrow	5	1.25	0
9826	6	Sage Thrasher	6	1.50	1
9826	7	Horned Lark	9	2.25	1
9826	7	Vesper Sparrow	Δ	1.00	0
9826	7	Brewer's Sparrow	1	0.25	0
	7	•		1.00	1
9826		Sage Thrasher	4		
9826	8	Horned Lark	11	2.75	0
9826	8	Vesper Sparrow	4	1.00	1
9826	9	Homed Lark	2	0.50	1
9826	9	Common Raven	1	0.25	0
9826	9	Vesper Sparrow	4	1.00	1
9826	9	Brewer's Sparrow	4	1.00	1
9826	9	Sage Thrasher	1	0.25	0
9826	10	Horned Lark	1	0.25	0
9826	10	Vesper Sparrow	4	1.00	1
9826	10		2	0.50	0
		Brewer's Sparrow	2	0.30	
9826	10	Cliff Swallow	ı ı		0
9826	10	Sage Thrasher	2	0.50	0



TRANSECT	POINT		SPECIES SUM	Adjusted Mean	Standard Deviation
9827	1	Horned Lark	5	1.25	1.26
9827	1	Vesper Sparrow	3	0.75	0.50
9827	2	Homed Lark	13	3.25	0.50
9827	2	Vesper Sparrow	1	0.25	0.50
9827	2	Savannah Sparrow	1	0.25	0.50
9827	3	Homed Lark	10	2.50	1.73
9827	3	Vesper Sparrow	3	0.75	
					0.96
9827	3	Savannah Sparrow	2	0.50	1.00
9827	4	Homed Lark	12	3.00	2.16
9827	4	Vesper Sparrow	4	1.00	0.82
9827	5	Horned Lark	20	5.00	5.66
9827	5	Vesper Sparrow	3	0.75	0.96
9827	5	Savannah Sparrow	3	0.75	0.50
9827	6	Homed Lark	10		
				2.50	0.58
9827	6	McCown's Longspi		1.50	1.00
9827	6	Vesper Sparrow	5	1.25	0.96
9827	7	Homed Lark	12	3.00	1.41
9827	7	Vesper Sparrow	2	0.50	1.00
9827	7	Savannah Sparrow	1	0.25	0.50
9827	8	Homed Lark	7	1.75	1.50
9827	8		,		
		Vesper Sparrow	6	1.50	1.29
9827	8	Savannah Sparrow	4	1.00	1.41
9827	9	Long-billed Curlew	1	0.25	0.50
9827	9	Northern Harrier	1	0.25	0.50
9827	9	Horned Lark	6	1.50	0.58
9827	9	Vesper Sparrow	7	1.75	0.50
9827	9	Savannah Sparrow	2	0.50	1.00
9827	10	Homed Lark	10		
				2.50	1.91
9827	10	Vesper Sparrow	5	1.25	0.50
9827	10	Chipping Sparrow	1	0.25	0.50
9827	10	Cliff Swallow	6	1.50	3 00
9828	1	Short-eared Owl	1	0.25	0.50
9828	1	Horned Lark	6	1.50	0.58
9828	1	Vesper Sparrow	4	1.00	1.15
9828	1	Savannah Sparrow	6	1.50	1.29
9828	,	Homed Lark	16	4.00	0.82
9828	~ 2	Common Raven	10		
	2		, ,	0.25	0.50
9828	3	Horned Lark	11	2.75	1.26
9828	3	Vesper Sparrow	4	1.00	0.82
9828	3	Cliff Swallow	2	0.50	1.00
9828	4	Horned Lark	11	2.75	1.50
9828	4	Vesper Sparrow	3	0.75	0.96
9828	5	Homed Lark	13	3.25	1.26
9828	5		4		
		Vesper Sparrow		1.00	1.41
9828	6	Homed Lark	10	2.50	1.00
9828	6	Vesper Sparrow	3	0.75	1.50
9828	7	Long-billed Curlew	1	0.25	0.50
9828 .	7	Horned Lark	9	2.25	0.96
9828	7	McCown's Longspu	ır 1	0.25	0.50
9828	7	Vesper Sparrow	7	0.75	0.96
9828	8	Long-billed Curlew		0.25	0.50
9828	8	Horned Lark	17	4.25	1.50
9828	8	Vesper Sparrow	4	1.00	1.15
9828	9	Homed Lark	14	3.50	1.73
9828	9	Vesper Sparrow	5	1.25	1.89
9828	9	Savannah Sparrow	2	. 0.50	0.58
9828	10	Long-billed Curlew	, 2	0.50	1.00
		_			
9828	10	Horned Lark	13	3.25	1.26
9828	10	Vesper Sparrow	2	0.50	1.00
9828	10	Savannah Sparrow	1	0.25	0.50
9829	1	Homed Lark	4	1.00	0.82
9829	1	Vesper Sparrow	4	1.00	0.82
9829	1	Brewer's Sparrow	5	1.25	1.50
9829	1	Sage Thrasher	1	0.25	0.50
7327	1	Sake Imasner	1	0.23	0.50



TRANSECT	POINT	SPECIES	SPECIES SUM	Adjusted Mean	Standard Deviation
9829	2	Vesper Sparrow	1	0 25	0 50
9829	2	Brewer's Sparrow	16	4.00	1,15
9829	2	Sage Sparrow	5	1.25	1.50
9829	2	Sage Thrasher	4	1.00	1.15
9829	3	Homed Lark	2	0.50	1.00
9829	3	Vesper Sparrow	2	0.50	1.00
9829	3	Brewer's Sparrow	2	0.50	0.58
			4	1.00	0.82
9829	3	Sage Thrasher	4		0.82
9829	4	Vesper Sparrow	4	1.00	
9829	4	Brewer's Sparrow	6	1.50	1.00
9829	4	Sage Thrasher	6	1.50	1.91
9829	5	Vesper Sparrow	3	0.75	0.96
9829	5	Brewer's Sparrow	8	2.00	1.41
9829	5	Sage Thrasher	4	1.00	0.00
9829	5	Rock Wren	2	0.50	0.58
9829	6	Horned Lark	2	0.50	1.00
9829	6	Vesper Sparrow	1	0.25	0.50
9829	6	Brewer's Sparrow	12	3.00	1.41
		•	2	0.50	0.58
9829	6	Sage Thrasher	2	0.25	0.50
9829	7	Horned Lark	1		
9829	7	Vesper Sparrow	4	1.00	0.82
9829	7	Brewer's Sparrow	7	1.75	1.26
9829	7	Sage Thrasher	4	1.00	0.82
9829	8	Vesper Sparrow	3	0.75	0.50
9829	8	Brewer's Sparrow	5	1.25	0.96
9829	8	Sage Thrasher	9	2.25	2.50
9829	9	Vesper Sparrow	4	1.00	1.15
9829	9	Brewer's Sparrow	12	3.00	0.82
9829	9	Sage Thrasher	3	0.75	0.50
			2	0.50	0.58
9829	10	Vesper Sparrow		2.75	1.71
9829	10	Brewer's Sparrow	11		
9829	10	Cliff Swallow	2	0.50	1.00
9829	10	Sage Thrasher	4	1.00	0.82
9830	1	Western Meadow	lark 2	0.50	1.00
9830	1	Vesper Sparrow	1	0.25	
9830	1	Brewer's Sparrow	13	3.25	0.96
9830	1	Sage Sparrow	1	0.25	0.50
9830	1	Sage Thrasher	2	0.50	0.58
9830	2	Willow Flycatche	r 1	0.25	0.50
9830	2	Vesper Sparrow	2	0.50	1.00
9830	2	Brewer's Sparrow		2.25	0.50
	2	•	2	0.50	0.58
9830		Sage Thrasher	3	0.75	0.96
9830	2	Rock Wren			
9830	3	Homed Lark	2	0.50	1.00
9830	3	Western Meadow	lark 2	0.50	0.58
9830	3	Vesper Sparrow	4	1.00	0.82
9830	3	Brewer's Sparrow	6	1.50	0.58
9830	3	Sage Thrasher	4	1.00	0.00
9830	4	Vesper Sparrow	3	0.75	0.96
9830	4	Brewer's Sparrow	8	2.00	0.82
9830	4	Sage Thrasher	3	0.75	0.50
9830	5	Willet	2	0.50	1.00
	5	Homed Lark	- A	1.00	0.82
9830			1	0.25	0.50
9830	5	Vesper Sparrow		2.00	1.41
9830	5	Brewer's Sparrow	8		1.41
9830	5	Sage Thrasher	4	1.00	
9830	6	Homed Lark	5	1.25	0.50
9830	6	Vesper Sparrow	1	0.25	0.50
9830	6	Brewer's Sparrow	9	2.25	0.96
9830	6	Sage Thrasher	3	0.75	0.96
9830	7	Homed Lark	8	2.00	1.41
9830	7	Vesper Sparrow	1	0.25	0.50
9830	7	Brewer's Sparrow	, 5	1.25	0.50
9830	7	Sage Thrasher	3	0.75	0.96
9830	8	Golden Eagle	1	0.25	0.50
9030	0	Colden Eagle	•	0.23	3.33



TRANSEC	TPOINT	SPECIES	SPECIES SUM	Adjusted Mean	Standard Deviation
9830	8	Horned Lark	1	0.25	0.50
9830	8	Western Meadowlar	k 3	0.75	0.50
9830	8	Vesper Sparrow	5	1.25	1.89
9830	8	Brewer's Sparrow	8	2.00	0.82
9830	8	Sage Thrasher	1	0.25	0.50
9830	8	Rock Wren	i	0.25	0.50
9830	9	Western Meadowlar	k i	0.25	0.50
9830	9	Vesper Sparrow	2	0.50	0.58
9830	9	Brewer's Sparrow	8	2.00	
9830	10	Homed Lark	1	0.25	141
9830	10	Vesper Sparrow	6	1.50	0.50
9830	10	Brewer's Sparrow	0	2.25	1 00
9830	10	Sage Thrasher	4	1.00	0.96





